

**ELECTRONIC MEETING AGENDA
ENVIRONMENTAL PROTECTION COMMISSION
WALLACE STATE OFFICE BUILDING
FEBRUARY 20, 1992**

**Meeting convenes at 10:00 a.m., February 20, 1992, fourth floor -
Wallace State Office Building.**

- 1. Adopted and Emergency Filed Rule--Chapter 135 Amendments,
Technical Standards for Underground Storage Tanks. (Stokes)
Decision.**

2-20-92
*There is no
tape for this
meeting as the
tape recorder
malfunctioned.*
Janie Hookin

ENVIRONMENTAL PROTECTION COMMISSION

Teleconference Meeting, Thursday, February 20, 1992

NAME

COMPANY OR AGENCY

CITY

(PLEASE PRINT)

Rod Boshart

CR Gazette

ENVIRONMENTAL PROTECTION COMMISSION
Adopted and Filed Emergency After Notice

Pursuant to the Authority of Iowa Code section 455B.474, the Environmental Protection Commission adopts amendments to Chapter 135, "Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks."

At a public hearing on February 17, 1992, the Environmental Protection Commission adopted the following amendments to Chapter 135. The amendments were published as a Notice of Intended Action, ARC 2325A, and as emergency rules, ARC 2322A, in the September 18, 1991, Iowa Administrative Bulletin. The Commission rescinded the emergency rules published as ARC 2322A, in the September 17, 1991 bulletin. The Notice of Intended Action solicited public comment and public hearings were held on October 22, 23 and 24, 1991. Revisions have been made to the proposed amendments in response to public comment.

The rules in ARC 2325A established criteria for the classification of underground storage tank sites on which a release of regulated substances had occurred and corrective action response requirements appropriate to the site classification. New tanks installed at contaminated sites were also required to have secondary containment.

In ITEM 1, the definition of "aquifer" has been deleted and a new definition "protected groundwater source" added. "Protected groundwater source" has been substituted for aquifer along with some sentence modification in the rule amendments. The new definition is intended to establish what groundwater sources have the potential to be used as a public or private water supply. This was needed since there was differing interpretations of the meaning of aquifer. The substitutions have occurred in subparagraph 135.8(4)"a"(2) and subparagraphs 135.8(4)"b"(8), (11), and (12).

A definition for "hydraulic conductivity" has been added to give definite procedures for its determination as used in the rules and within the definition of "protected groundwater source. The definition "Best available technology" has been modified by adding "capital and operating costs" as a parameter that is considered in determining the best available technology.

In ITEM 3, paragraph 135.3(2)"a" has been amended by striking the last two sentences. The paragraph requires tanks installed at contaminated sites to have secondary containment with monitoring of the interstitial space. The stricken sentences referred to alternative tank systems that could be installed in place of secondary containment. The paragraph now only references the Iowa Comprehensive

Petroleum Underground Storage Tank Fund Board's authority to approve alternative tank systems.

In ITEM 11, subrule 135.8(3), paragraph "g" has been modified by adding "in the unsaturated zone" to define the underground zone soil contamination must be identified in the soil contamination plume map.

Subrule 135.8(3) paragraph "n" has been changed by removing the last sentence since the methodology for determining hydraulic conductivity is now specified.

Subrule 135.8(4), subparagraphs "b"(7) and "b"(13) have been changed by reducing the distance contaminated soil and groundwater must be from an active well from 2,000 feet to 1,000 feet for a site to be considered low risk. Two sentences have also been added to the end of the paragraph that allow a groundwater professional to demonstrate no impact by the contamination will occur to an active well due to site conditions.

Subrule 135.8(4), subparagraph "b"(12) has been changed by reducing the distance from 150 feet to 100 feet that a contamination plume can be from a natural or man-made conduit to a protected groundwater source and still be considered low risk .

Subrule 135.8(4), subparagraph "b"(14) has been stricken and replaced with a new subparagraph that more clearly states the requirements.

Subrule 135.8(4), subparagraph "e" has been modified by adding a new first sentence that states the department may hold informal negotiations to resolve disagreements concerning site risk classification. In the third sentence, "correction" was replaced with "corrective action" to correct a wording error.

The term "parts per million" when applied to soils in the rules has been changed to "mg/kg" (milligrams per kilogram) to more precisely define the term. This has occurred in Subparagraphs 135.8(4)"b"(4), (7) and (8), paragraphs 135.8(4)"c" and "d", and paragraph 135.8(5)"c".

A new ITEM 15 has been added that amends subrule 135.9(3), paragraph "a" by adding ethylbenzene as a compound that must be analyzed for in groundwater samples at the time of tank closure. Ethylbenzene was added to the chart of corrective action levels in new subrule 135.8(8) after a maximum contaminant level (MCL) was adopted in the drinking water standards. This paragraph was inadvertently not changed to agree with the new action level in subrule 135.8(8).

In addition, pursuant to Iowa Code section 17A.5, the commission finds these rules should be effective upon filing, February 21, 1992, as they confer a benefit on the public.

These rules are intended to implement 1991 Iowa Acts, Senate File 362, sections 5 and 6.

The following amendments are adopted:

ITEM 1. Amend rule 135.2 by deleting "aquifer" and adding the following new definitions:

"Best available technology" means those practices which most effectively remove, treat, or isolate contaminants from groundwater, soil or associated environment, as determined through professional judgement considering actual equipment or techniques currently in use, published technical articles, site hydrogeology and research results, engineering and groundwater professional reference materials, consultation with experts in the field, capital and operating costs, and guidelines or rules of other regulatory agencies.

"Best management practices" means maintenance procedures, schedule of activities, prohibition of practices, and other management practices, or a combination thereof, which, after problem assessment, is determined to be the most effective means of monitoring and preventing additional contamination of the groundwater and soil.

"Hydraulic conductivity" means the rate of water movement through the soil measured in meters per day(m/d) as determined by the following methods. For a saturated soil, the Bouwer-Rice method or its equivalent shall be used. For unsaturated soil, use a Guelph permeameter or an equivalent in situ constant-head permeameter in a boring finished above the water table. If an in situ method can not be used for unsaturated soil because of depth or if the soil is homogeneous and lacks flow-conducting channels, fractures, cavities, etc., laboratory measurement of hydraulic conductivity is acceptable.

If laboratory methods are used, collect undisturbed soil samples using a thin-walled tube sampler in accordance with American Society of Testing and Materials (ASTM) Standard D1587. Samples shall be clearly marked, preserved and transported to the laboratory. The laboratory shall measure hydraulic conductivity using a constant-head permeameter in accordance with ASTM Standard D2434 or a falling-head permeameter in accordance with accepted methodology.

"Protected groundwater source" means a saturated bed, formation, or group of formations which has a hydraulic conductivity of at least 0.44 meters per day(m/d) and a total dissolved solids of less than 2,500 milligrams per liter(mg/l).

"Site assessment investigation" means an investigation conducted by a registered groundwater professional to determine relevant site historical data, the types, amounts, and sources of petroleum contaminants present, hydrogeological characteristics of the site, full vertical and horizontal extent of the contamination in soils and groundwater, direction and rate of flow of the

contamination, ranges of concentration of the contaminants by analysis of soils and groundwater, the vertical and horizontal extent of the contamination exceeding department standards, and the actual or potential threat to public health and safety and the environment.

"Site cleanup report" means a written report, prepared by a registered groundwater professional, which includes all relevant information, methodologies, findings and conclusions from a site assessment investigation, site classification and recommended corrective action based on the site classification.

ITEM 2. Amend subrule 135.3(1) paragraph "e" as follows:

e. Certification of installation. All owners and operators must ensure that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with paragraph "d" of this subrule by providing a certification of compliance on the UST notification form in accordance with 135.3(3).

(1) The installer has been certified by the tank or piping manufacturers; or

(2) The installer has been certified or licensed by the department Iowa petroleum underground storage tank fund board; or

(3) The installation has been inspected and certified by a registered professional engineer with education and experience in UST system installation; or

(4) The installation has been inspected and approved by the department an inspector certified or licensed by the Iowa petroleum underground storage tank fund board; or

(5) All work listed in the manufacturer's installation checklists has been completed; or

(6) The owner and operator have complied with another method for ensuring compliance with paragraph "d" that is determined by the department to be no less protective of human health and environment.

ITEM 3. Amend subrule 135.3(2) paragraph "a" as follows:

a. Alternatives allowed. Not later than December 22, 1998, all existing UST systems must comply with one of the following requirements:

(1) New UST system performance standards under 135.3(1);

(2) The upgrading requirements in paragraphs "b" and "d" below; or

(3) Closure requirements under 135.89(455B), including applicable requirements for corrective action under 135.7(455B) and 135.8(455B).

Replacement or upgrade of a tank on a petroleum contaminated site classified as a high or low risk in accordance with subrule 135.8(3) shall be a double wall tank or a tank equipped with a secondary containment system with

monitoring of the space between the primary and secondary containment structures in accordance with 135.5(4)"g" or other approved tank system or methodology approved by the Iowa petroleum underground storage tank fund board.

ITEM 4. Amend subrules 135.6(1) and 135.6(2) as follows:

135.6(1) Reporting of suspected releases. Owners and operators of UST systems must report to the department within 24 hours, or within 6 hours in accordance with 567-Chapter 131 if a hazardous condition exists as defined in 567-131.1(455B), or another reasonable time period specified by the department, and follow the procedures in ~~135-6(3)~~ 135.8(1) for any of the following conditions:

a. The discovery by owners and operators or others of released regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water).

b. Unusual operating conditions observed by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, or an unexplained presence of water in the tank), unless system equipment is found to be defective but not leaking, and is immediately repaired or replaced; and

c. Monitoring results from a release detection method required under 135.5(2) and 135.5(3) that indicate a release may have occurred unless:

(1) The monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial results; or

(2) In the case of inventory control, a second month of data does not confirm the initial result.

135.6(2) Investigation due to off-site impacts. When required by the department, owners and operators of UST systems must follow the procedures in ~~135-6(3)~~ 135.8(1) to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface and drinking waters) that has been observed by the department or brought to its attention by another party.

ITEM 5. Rescind and reserve existing subrule 135.6(3).

ITEM 6. Amend subrule 135.7(2) as follows:

135.7(2) Initial response. Upon confirmation of a release in accordance with ~~135-6(3)~~ 135.8(1) or after a release from the UST system is identified in any other manner, owners and operators must perform the following initial response actions within 24 hours of a release or within another reasonable period of time specified by the department.

ITEM 7. Amend subrule 135.7(3)"a"(5) as follows:

135.7(3)"a"(5) Measure for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and the source of the release have been confirmed in accordance with the site check required by ~~135.6(3)"b"~~ 135.8(1) or the closure site assessment of ~~135.8(3)"a"~~ 135.9(3)"a". In selecting sample types, sample locations, and measurement methods, the owner and operator must consider the nature of the stored substance, the type of backfill, depth to groundwater and other factors as appropriate for identifying the presence and source of the release; and

ITEM 8. Amend subrule 135.7(5) as follows:

135.7(5) Free product removal. At sites where investigations under 135.7(3) "a"(6) indicate the presence of free product, owners and operators must remove the free product to the maximum extent practicable as determined by the department while continuing, as necessary, any actions initiated under 135.7(2) to 135.7(4), or preparing for actions required under ~~135.7(6)-and-135.7(7)~~ 135.8(455B). In meeting the requirements of this subrule, owners and operators must:

a. Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeological conditions at the site, and that properly treats, discharges or disposes of recovery by-products in compliance with applicable local, state and federal regulations;

b. Use abatement of free product migration as a minimum objective for the design of the free product removal system;

c. Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

d. Unless directed to do otherwise by the department, prepare and submit to the department, within 45 days after confirming the release, a free product removal report that provides at least the following information:

(1) The name of the person(s) responsible for implementing the free product removal measures;

(2) The estimated quantity, type, and thickness of free product observed or measured in the monitoring, boreholes, and excavations;

(3) A schematic and narrative description ~~The-type of the~~ free product recovery system used;

(4) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

(5) A schematic and narrative description ~~The-type of the~~ treatment system ~~applied-to~~, and the effluent quality expected from any discharge;

(6) The steps that have been or are being taken to obtain necessary permits for any discharge; and

- (7) Disposition of the recovered free product;
- (8) Free product plume map; and
- (9) The estimated volume of free product present, how the volume was calculated, recoverable volume and estimated recovery time.

ITEM 9. Amend subrule 135.7(6) as follows:

135.7(6) Investigations-for-soil-and-groundwater Conditions requiring site cleanup reports.

a. In order to determine the full extent and location of soils contaminated by the release, and the presence and concentrations of dissolved product contamination in the groundwater, and site risk classification and applicable corrective action response; owners and operators must conduct site assessment investigations of the release, the release site, and the surrounding area possibly affected by the release and prepare a site cleanup report, if any of the following conditions exist:

(1) There is evidence that groundwater wells or surface waters have been affected by the release (e.g., as found during release confirmation or previous corrective action measures);

(2) Free product is found to need recovery in compliance with 135.7(5);

(3) There is evidence that contaminated soils may be in contact with groundwater (e.g., as found during conduct of the initial response measures or investigations required under 135.7(1) to 135.7(5); and

(4) Data obtained during any investigation conducted at the site indicate the soil or groundwater contamination corrective action levels under 135.8(8) have been exceeded;

(5) There is evidence that petroleum substances or vapors are present, or have the potential to be present, in concentrations sufficient to be harmful to public health or cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined space; or

~~(4)~~(6) The department requests an investigation the preparation of a site cleanup report, based on the potential effects of contaminated soil or groundwater on nearby surface-water the environment. and groundwater-resources;

b. The owners or operators must submit the information collected under paragraph "a" of this subrule as soon as practicable or in accordance with a schedule established by the department.

ITEM 10. Rescind subrules 135.7(7) through 135.7(10).

ITEM 11. Adopt a new rule 567--135.8(455B) and renumber existing rules 567--135.8(455B) and 567--135.9(455B) as 567--135.9(455B) and 567--135.10(455B), respectfully.
567--135.8(455B) Site cleanup report.

135.8(1) Release investigation and confirmation steps.
Unless corrective action is initiated in accordance with

rule 135.8(2)(455B), owners and operators must immediately investigate and confirm all suspected releases of regulated substances requiring reporting under 135.6(1) within seven days, or another reasonable time period specified by the department, using either the following steps or another procedure approved by the department:

a. System test. Owners and operators must conduct tests (according to the requirements for tightness testing in 135.5(4)"c" and 135.5(5)"b") that determine whether a leak exists in that portion of the tank that routinely contains product, or the attached delivery piping or both.

(1) Owners and operators must repair, replace or upgrade the UST system, and begin corrective action in accordance with rule 135.8(2) if the test results for the system, tank, or delivery piping indicate the a leak exists.

(2) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a leak exists and if environmental contamination is not the basis for suspecting a release.

(3) Owners and operators must conduct a site check as described in paragraph "b" of this subrule if the test results for the system, tank, and delivery piping do not indicate that a leak exists but environmental contamination is the basis for suspecting a release.

b. Site check. Owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth of groundwater, and other factors appropriate for identifying the presence and source of the release.

(1) If the test results for the excavation zone or the UST site indicate that a release has occurred, owners and operators must begin corrective action in accordance with rule 135.7(455B) and 135.8(455B);

(2) If the test results for the excavation zone or the UST site do not indicate that a release has occurred, further investigation is not required.

135.8(2) General.

a. At any time after reviewing the information submitted in compliance with 135.7(2) to 135.7(4), the department may require owners and operators to submit additional information or to develop and submit a site cleanup report for responding to contaminated soils and groundwater. If a report is required, owners and operators must submit the report according to a schedule and form or format prescribed by the department. Alternatively, owners and operators may, after fulfilling the requirements of 135.7(2) to 135.7(4), choose to submit a site cleanup report for responding to

contaminated soil and groundwater. In either case, owners and operators are responsible for submitting a site cleanup report that provides adequate protection of human health, safety, and the environment on a form or in a format prescribed by the department. The report must be modified as necessary to meet these standards.

b. The site cleanup report must include, but not be limited to, a detailed discussion of the site assessment investigation procedures and findings, site risk categorization and the corrective or no action response recommendation. The site cleanup report must be submitted in a form or format prescribed by the department.

c. The department will approve the site cleanup report prepared by a registered groundwater professional after determining that implementation of the report will adequately protect human health, safety, and the environment.

135.8(3) Site assessment investigation procedures and findings. The following are the minimum requirements for reporting the results of the site assessment.

a. Site History. Summarization of current and past site ownership, operation, petroleum releases, events that led to the discovery of the contamination and current site status.

b. Topographic Map. A topographic map of the site and surrounding area developed from work done at the site, city surveys where available or USGS maps.

c. Groundwater Contour Map. A groundwater contour map of the site indicating the direction of groundwater flow is required. Groundwater contours and elevations at each data point used for contouring must be labeled. Contours must be consistent with observed water level elevations. It must include a description of groundwater flows and explain any anomalous water levels. Describe any fluctuations in the water level which may occur, with special emphasis on groundwater elevations and geological conditions which may alter the general groundwater gradient or flow directions.

d. Site Maps. Provide two site maps. Map #1 must show the site plan and immediate surrounding area (scale 1 inch = 20 to 50 feet). Map #2 must show the site in relation to general area features (scale 1 inch = 200 to 500 feet). The maps must show, but not be limited to:

(1) Location and content of existing and removed USTs, product lines and dispensers.

(2) Pertinent site features (i.e., buildings, roads, water wells, water ways, sinkholes, utility lines, etc.);

(3) Location of soil borings, monitoring wells and natural and man-made conduits and utility lines.

e. Evaluation of Natural and Man-made Conduits. An evaluation must be made of the potential for all natural and man-made conduits and utility lines located within 100 feet

from the contaminated groundwater or soil, to act as contaminant migration pathways.

f. Free Product Evaluation. A discussion of how free product was dealt with is required if it was identified at the site. If free phase product is encountered during on-site work, notify the department within 24 hours. Free product removal must be conducted in accordance with 135.7(5).

g. Soil Contamination Plume Maps. Provide contamination plume map or maps depicting the full extent of soils in the unsaturated zone exceeding the soil contamination corrective action level under 135.8(8) and the levels of contamination within the plume.

h. Soil Boring Data and Methodology. Identify and justify methods used to determine the site stratigraphy. Boring spacing must be sufficient to accurately portray site stratigraphy and delineate the outer edge of soil contamination exceeding the corrective action level under 135.8(8). Provide a log for each boring on a form or in a format prescribed by the department.

i. Soil Sampling Methodology. Define and explain the soil sampling methodology used during the assessment.

j. Groundwater Contamination Plume Maps. Provide groundwater contamination plume map or maps depicting the full extent of free phase product and dissolved phase contamination exceeding the groundwater corrective action levels under 135.8(8) and the levels of groundwater contamination within the plume. The monitoring well spacing will be dependent on site stratigraphy and must be sufficient to adequately define the extent of the contamination plume which exceeds the groundwater corrective action standards under 135.8(8).

k. Monitoring Well Construction Methodology and Design Standards. Describe monitoring well construction methodology and provide logs for all wells with design details illustrated.

l. Groundwater Sampling Methodology. Define and explain the groundwater sampling methodology used during the assessment.

m. Analytical Procedures. Provide copies and tabulations of all analytical results on a form or in a format prescribed by the department. The laboratory analytical result reporting format and analyses conducted must be provided in accordance with 135.10(455B).

n. Hydraulic Conductivity. Determine the hydraulic conductivity of subsurface materials at the site.

o. Hydrogeologic Cross Sections. Provide stratigraphically correlated hydrogeologic cross sections or three-dimensional diagrams which adequately define the spatial relationships of subsurface materials at the site. Ideally, the cross sections should illustrate the materials

in the contamination zone. The sections or diagrams must include, at a minimum, the identification of the types and characteristics of the geologic materials present, identification of the contact zones between different geologic materials, (noting zones of high permeability or fracture) and detailed borehole information including borehole location, depth of termination and the depth of zone of saturation.

p. Site Safety. On-site health and safety procedures must conform with applicable OSHA requirements.

q. Plugging Abandoned Wells and Soil Borings. All abandoned wells and borings that access groundwater must be plugged according to Chapter 567--39(455B). DNR Form 542-1226 must be completed and submitted to the department.

r. Leak Source Identification. Identify the source of the petroleum contamination at the site as required by 135.8(1). Provide copies of all analytical and tank and line tightness testing results and supporting field data.

s. Adjacent Property Owners. Include the names and addresses of adjacent property owners that may be affected by the petroleum contamination.

135.8(4) Site Risk Classification. Sites shall be classified as either high risk, low risk or no action required. The risk assessment and classification shall be based on the actual or potential threat to public health and safety and the environment and shall take into account relevant factors, including the presence of petroleum contamination in soils, groundwater, and surface waters, site geology and the effect conduits, barriers and separation distances have on the contamination. The site classification determination must be based on information obtained during the site assessment investigation, as well as historical and general site information.

a. Site Classification Factors. At a minimum, the following factors must be considered during the classification process when:

(1) Evaluating for the presence of contamination in soils, include the depth of existing contamination in relation to the ground surface, separation distance of the contamination zone from groundwater, and the morphology and variability of soils in the contamination zone.

(2) Evaluating for the presence of contamination in groundwater, include the depth of existing contamination in relation to the ground surface, depth of existing contamination in relation to the ground water level, groundwater flow direction and the relationship between the flow direction and the contamination zone, hydraulic and chemical properties of the protected groundwater source or saturated zone, groundwater uses and the relationship between the contaminated groundwater zone and deeper protected groundwater sources.

(3) Evaluating for the presence of contamination in surface water, include the location and separation distance from the contamination zone, groundwater system and groundwater flow direction.

(4) Evaluating the effects of conduits, barriers and distances on the contamination found in soils, groundwater and surface waters, include the effect of the contamination on such conduits as wells, utility lines, tile lines and drainage systems, the effect conduits have on contaminant transport, whether a well is active or abandoned, what function the utility conduit serves, the existence of barriers, (i.e., buildings, structures, pavement, natural, etc.) and the distance which separates the contamination found in soils, groundwater and surface waters from the conduits and barriers.

(5) The department shall decide the classification based on the recommendation and information provided by the groundwater professional.

b. High-risk classification. A site shall be classified high risk if any of the following conditions exist:

(1) The Threshold Limit Value-Time Weighted Average (TLV-TWA) for benzene in occupied structures exceeds or is likely to exceed 10 parts per million for more than 8 hours per day.

(2) The concentration of combustible gases in structures, basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or any other confined space exceeds or is likely to exceed 10% of the lower explosivity limit (LEL).

(3) The surface water quality criteria standards contained in subrule 567--61.3(455B) of the Iowa Administrative Code are exceeded or are likely to be exceeded due to a hydrogeologic connection between the surface water and the contamination zone.

(4) Petroleum contaminated soil exceeding 100 mg/kg total organic hydrocarbons is in contact with a utility trench carrying a PVC drinking water transmission line.

(5) The petroleum contamination in utility trenches exceeds the corrective action levels in 135.8(8).

(6) Petroleum contamination is present at concentrations, or concentrations are likely to occur, to cause or be likely to cause physical damage to a utility conduit or a structure.

(7) Soil with a total organic hydrocarbon level greater than 100 mg/kg is located within 1,000 feet of an active well used as a public or private water source. A site may be classified low risk if a groundwater professional can demonstrate the water source will not be impacted by the soil contamination to the extent that conditions in subrule 135.8(4)"b"(10) occur. Factors that must be considered in evaluating the impact of the remaining soil contamination include well depth, construction, radius of influence and

use; area hydrogeologic characteristics; soil permeability, transmissivity, and contamination concentrations and persistence; chemical characteristics, and migration potential of the released substance.

(8) Soil with a total organic hydrocarbon level greater than 100 mg/kg is located within the seasonal high groundwater level of a protected groundwater source or groundwater serving as a public or private water source.

(9) The petroleum release occurred in an area of fractured limestone or karst topography (i.e., topography formed on limestone, gypsum and other rocks by dissolution and characterized by sinkholes, caves and underground drainage). A site may be classified low risk if a groundwater professional can demonstrate that the protected groundwater sources in the area of the petroleum release will not be impacted by the contamination to the extent that conditions in subrule 135.8(4)"b"(10) occur. Factors that must be considered in evaluating the impact of the petroleum contamination include area hydrogeologic characteristics; separation distance between the contaminated zone and protected groundwater sources; soil permeability and transmissivity; overburden thickness and contamination concentrations; and the persistence, chemical characteristics and migration potential of the released substance.

(10) A public or private water supply is or is likely to be contaminated to the extent that a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code), or in the absence of a maximum contaminant level, an action level (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) is exceeded.

(11) A protected groundwater source is contaminated to the extent that a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code), or in the absence of a maximum contaminant level, an action level (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) is exceeded.

(12) The contaminated groundwater plume is within 100 feet of natural or man-made structures or conduits that would allow the vertical or horizontal migration of contaminants to a protected groundwater source that is used as a public or private water source.

(13) The contaminated groundwater plume is within 1,000 feet of an active well used as a public or private water source. A site may be classified low risk if a groundwater professional can demonstrate the water source will not be impacted by the groundwater contamination to the extent that conditions in subrule 135.8(4)"b"(10) occur. Factors that must be considered in evaluating the impact of the remaining water contamination include well depth, construction, radius

of influence and use; area hydrogeologic characteristics; soil permeability and transmissivity; and contamination concentrations and persistence, chemical characteristics, and migration potential of the released substance.

(14) The material separating groundwater serving as a public or private water source or which is a protected groundwater source from soil with a total organic hydrocarbon level greater than 100 mg/kg which has a hydraulic conductivity greater than 10^{-4} meters per day. The separating material must have a hydraulic conductivity less than or equal to 10^{-4} meters per day, a minimum thickness of three meters, and be free of subsurface discontinuities between the contamination zone and the groundwater for the site to be not classified high risk.

A site can be classified low risk if a groundwater professional can demonstrate with hydrogeological and risk assessment data that the separating material will prevent or inhibit the migration of contaminants to the groundwater to the extent that a maximum contaminant level (as contained in rule 567--41.3(455) of the Iowa Administrative Code) or in the absence of a maximum contaminant level an action level (as defined in rule 567--133.2(455B, 455E) of the Iowa Administrative Code) will not be exceeded. A sufficient number of measurements of the hydraulic conductivity shall be made to accurately identify the hydrogeologic conditions of the separating material under the full areal extent of the contamination zone. Measurements shall be made at a minimum of two locations. The distance between adjacent measurement locations shall not exceed 100 feet. The department may require additional measurements based on the hydrogeologic complexity of the site.

c. Low risk classification. A site shall be classified low risk if the soil total organic hydrocarbon concentration exceeds 100 mg/kg or the groundwater contamination concentrations exceed a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code), or in the absence of a maximum contaminant level an action level (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) but high risk conditions do not exist and are not likely to occur.

d. A site shall be classified as no action required if the soil total organic hydrocarbon concentration is equal to or less than 100 mg/l or the groundwater contamination concentrations is equal to or less than a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code) or in the absence of a maximum contaminant level an action level (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) and high or low risk conditions do not exist and are not likely to occur.

e. Reclassification. The department may hold informal negotiations to resolve disagreements concerning a site risk classification. Sites shall be reclassified to higher or lower risk classification if any of the conditions under 155.8(4)'b', 'c' or 'd' occur. A site classified as high risk due only to vapor concentrations stated in subparagraphs 135.8(4)"b" (1) and (2), may be reclassified as a low risk site if a permanent solution other than remediation has resulted in at least one year of vapor free conditions. Sites classified as high risk due only to soil contamination stated in subparagraphs 135.8(4)"b" (4), (5), or (6), may be reclassified as a low risk site if all soils exceeding a corrective action level is removed for a distance of at least 50 feet from the conduit and replaced with a compacted clay or other soil having a hydraulic conductivity not greater than 10^{-5} meters per day.

135.8(5) Corrective action response. The best available treatment technology or best management practices available to address the contamination at the site must be identified. The recommended best available treatment technology or best management practices must be consistent with the site risk classification. The corrective action response shall be in a form or format prescribed by the department and include, but not be limited to, the following:

a. Identification of the phases, phase volumes and concentrations of contamination present at the site resulting from the release of petroleum product from underground storage tanks.

b. Classification of site risk in accordance with the criteria cited under 135.8(4)'b', 'c' or 'd', accompanied by supporting documentation and a detailed explanation and justification of the rationale used to make the determination.

c. Sites classified as high risk shall be remediated to the extent that the groundwater does not exceed a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code) or in the absence of a maximum contaminant level an action level (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) and the soil does not exceed 100 mg/kg total organic hydrocarbons, or alternative levels approved by the department.

d. Sites classified as low risk shall be subject to best management practices which will include contamination monitoring conducted according to the following schedule. Sites shall be monitored according to the previous higher monitoring schedule as established by this subrule if at any time the contamination concentration has increased or moved by a significant amount:

(1) Up to three times per year from years one through three.

- (2) Up to two times per year from years four through six.
- (3) One time per year from years seven through nine.
- (4) In the twelfth year the site shall be monitored one time. The site shall be reclassified as a no action site if there has been no significant increase in concentration or movement of the contamination.

e. For sites classified as high risk, identify at least two practically applicable treatment technologies available to address the contamination at the site. Include cost estimates for each technology with a breakdown of capital, operation and maintenance costs. Explain the environmental and public health benefits, and the estimated time of cleanup of all contamination phases for each technology option being considered.

f. Selection of corrective action treatment technology. Select and provide a detailed justification for implementing the best available treatment technology. An innovative design selection must be accompanied by system operational and technical data that will support the best available treatment technology selection.

g. For sites classified as low risk, provide a best management practices plan. The plan must include maintenance procedures, schedule of activities, prohibition of practices, and other management practices, or a combination thereof, which, after problem assessment, are determined to be the most effective means of monitoring and preventing additional contamination of the groundwater and soil. The plan will also contain a contamination monitoring proposal as required under 135.8(5)'d' containing sufficient sampling points to assure the detection of any significant movement of or increase in contaminant concentration.

h. Provide a discussion of the measures taken to repair, upgrade or close leaking underground storage tanks and piping systems.

i. Free product removal must be conducted as required under 135.7(5).

135.8(6) Site cleanup report approval.

a. The department will approve the site cleanup report upon determination that implementation of the corrective action response will adequately protect human health, safety, and the environment. In making this determination, the department will consider the following factors as appropriate:

- (1) The physical and chemical characteristics of the regulated substance, including its toxicity, persistence and potential for migration;
- (2) The hydrological and hydrogeological characteristics of the site and the surrounding area;
- (3) The proximity, quality, and current and future uses of nearby surface water and groundwater;

Groundwater ----- 5 ug/L 2,420 ug/L 12,000 ug/L 700 ug/L

135.8(9) Certificates.

a. Monitoring certificate. The department of natural resources will issue a monitoring certificate to the owner of an underground storage tank site classified as low risk. The monitoring certificate will be valid until the site is reclassified to a high risk or no action required site. A site which has been issued a monitoring certificate shall not be eligible to receive a certificate evidencing completion of remediation until the site is reclassified as no action required. The monitoring certificate will be invalidated and the site reclassified to high risk if it is determined by the department that the owner of the site is not in compliance with the requirements specified in the monitoring certificate.

b. Certificate of completion of site remediation. Upon written request of an underground storage tank owner, the department of natural resources will issue a certificate to the owner evidencing completion of a remedial action by cleaning the site to then current standards or alternative levels as determined by the department. The following conditions apply:

(1) The written request to the department for the certificate must be made after receiving the department's letter acknowledging compliance with the current standards or alternative levels as approved by the department.

(2) The certificate will be issued if the department does not order further remediation work to be performed within 90 days of the department's letter acknowledging compliance with current standards or alternative standards as approved by the department.

(3) A person issued a certificate shall not be required to perform further remediation.

(4) The certificate shall not prevent the department from ordering remediation of a new release or a release of a regulated substance from an unregulated tank.

(5) The certificate will not constitute a warranty of any kind to any person as to the condition, marketability or value of the described property.

ITEM 12. Amend renumbered 135.10(3) as follows:

135.10(3) Analysis of soil and water for high volatile petroleum compounds (i.e. gasoline, benzene, toluene, xylene). Sample preparation and analysis shall be by Method OA-1, "Method for Determination of Volatile Petroleum Hydrocarbons(Gasoline)." revision 1/10/90 7/1/91, University Hygienic Laboratory, Iowa City, Iowa. This method is based on U.S. EPA methods 5030, 8000, and 8015, SW-846, "Test Methods for Evaluating Solid Waste," 3rd Edition. Copies of Method OA-1 are available from the department.

ITEM 13. Amend renumbered 135.10(4) as follows:

135.10(4) Analysis of soil and water for low volatile petroleum hydrocarbon contamination(i.e. all grades of diesel fuel, fuel oil, kerosene, oil, mineral spirits). Sample preparation and analysis shall be by Method OA-2, "Determination of Extractable Petroleum Products (and Related Low Volatility Organic Compounds)," revision 7/1/91, University Hygienic Laboratory, Iowa City, Iowa. This method is based on U.S. EPA methods 3500, 3510, 3520, 3540, 3550, 8000, and 8100, SW-846, "Test Methods for Evaluating Solid Waste," 3rd Edition. Copies of Method OA-2 are available from the department.

ITEM 14. Due to the adoption of a new rule 135.8, the rescission of subrules 135.7(7) through 135.7(10) the rescission and redesignation of 135.6(3) and the renumbering of former rules 135.8 and 135.9, all rules in chapter 135 referencing these renumbered rules have been amended accordingly. These are considered technical and not substantive changes.

Renumber and change the following references:

Subrule 135.1(3), paragraph "c" first sentence - renumber 135.8(455B) to 135.9(455B).

Subrule 135.3(2), subparagraph "a"(3) - renumber 135.8(455B) to 135.9(455B); change 135.7(455B) to "135.7(455B) and 135.8(455B)".

Subrule 135.4(5), subparagraph "a"(3) - renumber 135.7(7) to 135.8; subparagraph "a"(4) - renumber 135.8(2) to 135.9(2); subparagraph "b"(5) - renumber 135.8(5) to 135.9(5); in "Note" - renumber 135.8(5) to 135.9(5).

Subrule 135.5(1), paragraph "d" - renumber 135.8(455B) to 135.9(455B).

Subrule 135.5(2), subparagraph "a"(2) - renumber 135.8(2) to 135.9(2).

Subrule 135.6(4), paragraph "a" end of first sentence - change 135.7(455B) to "135.7(455B) and 135.8(455B)".

Subrule 135.7(3), subparagraph "a"(5) - renumber 135.6(3)"b" to 135.8(1); renumber 135.8(3)"a" to 135.9(3)"a".

Renumbered subrule 135.9(1), paragraph "a" second sentence - change 135.7(455B) to "135.7(455B) and 135.8(455B)"; paragraph "c" - renumber 135.8(2) to 135.9(2); renumber 135.8(5) to 135.9(5); renumber 135.8(3) to 135.9(3).

Renumbered subrule 135.9(2), paragraph "a" - renumber 135.8(3) to 135.9(3); paragraph "c" - renumber 135.8(3) to 135.9(3); in Note - renumber 135.8(2) to 135.9(2).

Renumbered subrule 135.9(3), paragraph "g" third sentence - change 135.7(455B) to "135.7(455B) and 135.8(455B)"; paragraph "g," second paragraph - renumber 135.8(4) to 135.9(4).

Renumbered Subrule 135.9(4), paragraph "a" - renumber 135.8(3) to 135.9(3); paragraph "c" - renumber 135.8(3)"a"

to 135.9(3)"a"; paragraph "d" - renumber 135.8(3)"b" to 135.9(3)"b"; paragraph "e" - renumber 135.8(3)"e" to 135.9(3)"e".

Renumbered subrule 135.9(6), second sentence - renumber 135.8(3) to 135.9(3).

ITEM 15. Amend renumbered subrule 135.9(3), paragraph "a" as follows:

a. Before permanent closure or a change in service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting the sample types, sample locations, and measurement methods, the owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to groundwater, and other factors appropriate for identifying the presence of a release.

At petroleum UST sites, the minimum parameters that must be analyzed for are:

1. Soil samples must be analyzed for total organic hydrocarbon (TOH) as the product stored in the tank;
2. Groundwater samples must be analyzed for benzene, toluene, ethylbenzene, and xylene with each compound reported separately.

All such samples shall be collected separately and shipped to a qualified laboratory within 72 hours of collection. Samples shall be refrigerated and protected from freezing during shipment to the laboratory.

DATE

Larry Wilson, Director

RESPONSE TO COMMENTS

AMENDMENTS TO CHAPTER 135 OF THE IOWA ADMINISTRATIVE CODE

1. COMMENT SUBMITTED BY: James A. Cunningham, Terracon Environmental, Inc.; and Paul Jacobson and Larry Steburg, MER Engineering.

COMMENT: 135.2 defines an aquifer. Depending upon well depth, screen size, well diameter and other construction factors, a given formation may or may not yield water at a rate of two gallons per minute. The definition should be based on the hydraulic and physical properties of the formation.

RESPONSE: We agree the definition should be modified to more clearly define the hydraulic and physical properties of the water-bearing formation. We are also changing the term "aquifer" to "protected groundwater source". This change in terms should eliminate any confusion resulting from the use of the broad-based term "aquifer", which is subject to many interpretations. In addition, we are providing a definition and method for determining hydraulic conductivity. As a result of specifying methods for determining hydraulic conductivity, subrule 135.8(3)n will be modified to eliminate the need for a discussion and justification of the method used to obtain hydraulic conductivity values.

RECOMMENDATION: Change the definition for aquifer (subrule 135.2) as follows: "Protected groundwater source" means a saturated bed, formation or group of formations which has a hydraulic conductivity of 0.44 meters per day (m/d) and a total dissolved solids concentration less than 2,500 mg/l.

Add the following definition to subrule 135.2: "Hydraulic conductivity" means the rate of water movement through soil measured in meters per day (m/d) as determined by the following methods: for saturated soil, the Bouwer-Rice Method or its equivalent shall be used; for an unsaturated soil, use a Guelph permeameter or an equivalent in situ constant-head permeameter in a boring finished above the water table. If an in situ method can not be used for unsaturated soil because of depth or if the soil is homogeneous and lacks flow-conducting channels, fractures, cavities, etc., then laboratory measurement of hydraulic conductivity is acceptable.

If laboratory measurements are used, collect undisturbed soil samples using a thin-walled tube sampler in accordance with American Society of Testing and Materials (ASTM) Standards D1587. Samples shall be clearly marked, preserved and transported to the laboratory. The laboratory shall measure hydraulic conductivity using a constant-head permeameter in accordance with ASTM Standard D2434 or a falling-head permeameter in accordance with accepted methodology.

Modify subrule 135.8(3)n as follows: Hydraulic conductivity. Determine the hydraulic conductivity of subsurface materials at the

site. Discuss -and -justify -the -methodology --used -in -obtaining -the values-

2. COMMENT SUBMITTED BY: James A. Cunningham, Terracon Environmental, Inc.

COMMENT: The term site check (135.3(1)e) is not well defined.

RESPONSE: The site check requirements were not within the focus of this rulemaking. The requirements were effective October 24, 1988, when the department adopted the federal underground storage tank technical requirements contained in 40 CFR 280 and 281 (September 23, 1988). The comment did not provide enough information to determine the lack of specificity in the definition or requirements.

RECOMMENDATION. Recommend no change in the rule.

3. COMMENT SUBMITTED BY: James A. Cunningham, Terracon Environmental, Inc.; Jonathan C. Lamprey, Microbial Environmental Services, Inc.; Iowa Retail Gasoline and Automotive Trades Association; Monica Wnuk; Alan Foster, Sierra Club; E. A. Kistenmacher, Petroleum Marketers of Iowa; and Paul Jacobson and Larry Steburg, MER Engineering.

COMMENT: A number of comments were received regarding subrule 135.8(4)b(7). The subrule requires a site to be classified as high risk if soil contamination exceeding 100 PPM total organic hydrocarbons is within 2,000 feet of a well used as a public or private water source. Comments indicated the separation distance was adequate and protective of groundwater sources, would adversely affect site owners in small communities, was too restrictive, should only be applied to drinking water wells or that the separation distance should be based on site geology and well construction details.

RESPONSE: Senate File 362 requires the protection of public and private water sources through the site ranking factors. The Senate File also required source uses to be identified but did not specify that the protection of one source use should have precedence over another. In addition, the Senate File does not provide for community size to be a consideration in the protection of water sources. We are modifying the subrule by decreasing the separation distance and providing an alternative method for determining the impact of remaining soil contamination on public or private wells used as a water source.

RECOMMENDATION: Modify subrule 135.8(4)b(7) as follows: Soil with a total hydrocarbon level greater than 100 parts per million is located within 1,000 feet of an active well used as a public or private water source. A site may be classified low risk if a groundwater professional can demonstrate the water source will not be impacted by the soil contamination to the extent that the conditions in subrule 135.8(4)b(10) occur. Factors that must be considered in evaluating the impact of the remaining soil contamination include well depth, construction, radius of influence and use; area hydrogeologic characteristics; soil permeability, transmissivity and contamination concentrations and the persistence, chemical characteristics and migration potential of the released substance.

4. COMMENT SUBMITTED BY: James A. Cunningham, Terracon Environmental, Inc.; Iowa Retail Gasoline and Automotive Trades Association;

Jonathan C. Lamptey, Microbial Environmental Services, Inc.; Monica Wnuk; Alan Foster, Sierra Club; E. A. Kistenmacher, Petroleum Marketers of Iowa; and Paul Jacobson and Larry Steburg, MER Engineering.

COMMENT: A number of comments were received regarding subrule 135.8(4)b(13). The subrule requires a site to be classified as high risk if the groundwater contamination plume is within 2,000 feet of a well used as a public or private water source. Commenters indicated the separation distance was adequate and protective of groundwater sources, too restrictive, too conservative or that the separation distance should be based on site geology and well construction details. Other commenters suggested the separation distances should only apply to drinking water wells.

RESPONSE: The applicability of the classification criteria to public or private water sources is consistent with the wording contained in Senate File 362. Due to limits on investigative costs, anomalous site conditions and the lack of a complete understanding of contamination transport mechanisms, it is not always possible for groundwater professionals to precisely define or predict site conditions. Therefore, it is necessary to provide for a protective buffer zone between petroleum contamination and water sources. We are modifying the subrule by decreasing the separation distance and providing an alternative method for determining the impact of groundwater contamination on public or private wells used as a water source.

RECOMMENDATION: Modify subrule 135.8(4)b(13) as follows: The contaminated groundwater plume is within 1,000 feet of an active well used as a public or private water source. A site may be classified low risk if a groundwater professional can demonstrate the water source will not be impacted by groundwater contamination to the extent that the conditions in subrule 135.8(4)b(10) occur. Factors that must be considered in evaluating the impact of the groundwater contamination include well depth, construction, radius of influence and use; area hydrogeologic characteristics; soil permeability and transmissivity; groundwater contamination concentrations and the persistence, chemical characteristics and migration potential of the released substance.

5. COMMENT SUBMITTED BY: James A. Cunningham, Terracon Environmental, Inc.

COMMENT. The best available treatment technology and best management practices are often cost prohibitive. It would be more appropriate if the corrective action response would use appropriate management practices and appropriate technology considering the technologic, economic and time factors as specified in SF 362.

RESPONSE. We are modifying the definition for best available treatment technology to include economic considerations in the evaluation process. ~~As defined, the best management practices should not be cost prohibitive since they include activities the tank owner or operator would be conducting to comply with the underground storage tank technical standards (periodic tank and line tightness testing, inventory control, spill and overfill prevention, etc.).~~

RECOMMENDATION. Modify the definition for best available technology (135.2) as follows: "Best available technology " means those

practices which most effectively remove, treat, or isolate contaminants from groundwater, soil or associated environment, determined through professional judgement considering actual equipment or techniques currently in use, published technical articles, site hydrogeology and research results, engineering and groundwater professional reference materials, consultation with experts in the field, capital and operating costs, and guidelines or rules of other regulatory agencies.

6. COMMENT SUBMITTED BY: Amy Christensen Couch, Wasker, Sullivan & Ward.
COMMENT: 135.8(1) requires UST owners or operators to immediately investigate and confirm suspected releases within seven days or another reasonable time specified by the department. The commenter was concerned the seven-day reporting requirement would be unreasonable if the UST owner or operator had to obtain budget approval from the Underground Storage Tank Fund Board prior to beginning work at the site.

RESPONSE: We generally have allowed the investigation and confirmation reports to be submitted within a period of time greater than seven days when conditions warrant such action. However, due to the potential for petroleum releases to adversely impact the environment and public health, UST owners and operators must not use the budget approval process as a means to extend submittal schedules.
RECOMMENDATION: Recommend no change in the rule.

7. COMMENT SUBMITTED BY: J. D. Haines, R. E. Blattert & Associates.
COMMENT: The initial draft of the IDNR Site Cleanup Report appears to be a "fill in the blank" type form. The commenter requested the department to consider a written type format with the outline agreed upon through consultation with IDNR and the groundwater professional community.

RESPONSE: The standardized format will increase the department's report review efficiencies. The "fill in the blank" concept was adopted in an effort to assure adequate data are submitted to properly classify sites and to limit the submittal of extraneous data. We anticipate conducting meetings in the future with groundwater professionals to discuss implementation of the Site Cleanup process.

RECOMMENDATION: Comments will be taken from groundwater professionals and revisions which improve the practical application of the form will be considered.

8. COMMENT SUBMITTED BY: Iowa Retail Gasoline and Automotive Trades Association.

COMMENT: The site classification rules go beyond the legislative intent. A site should be considered low risk if the contamination does not cause an immediate harm to groundwater which is used as a source for public or private water supplies.

RESPONSE: We do not agree the rules go beyond legislative intent. Senate File 362 states that sites should be considered high risk if the contamination is likely to cause public or private water supplies to be unfit for human consumption.

RECOMMENDATION: Recommend no change in the rule.

9. COMMENT SUBMITTED BY: Iowa Retail Gasoline and Automotive Trades Association.
COMMENT: According to 135.8(4)b a site would be considered high risk if any one of the fourteen conditions exist. The commenter recommended a complete review of the high risk classification factors and deleting the language referring to "A site shall be classified if any of the following exist" and inserting the following: "The following factors may be considered to determine if a site is to be classified as high risk."
RESPONSE: The high risk classification factors were reviewed as a result of comments received. The factors are consistent with the classification conditions contained in Senate File 362. Senate File 362 does not provide for the latitude contained in the commenter's recommendation.
RECOMMENDATION: Revisions of the classification factors are being made as a result of other more specific comments.
10. COMMENTS SUBMITTED BY: Iowa Retail Gasoline and Automotive Trades Association; and James A. Cunningham, Terracon Environmental, Inc.
COMMENT: A commenter expressed concern that using such phrases in subrule 135.8(4)b as "or likely to exceed", "are likely to occur", "to cause or be likely to cause", and "or with the potential", are too subjective and will result in most sites being classified as high risk. The commenter stated that contamination is either affecting the groundwater or it is not, and recommended a review of all references to "likely to exceed", "likely to occur" or "with the potential." The commenter believed that if there were potential contamination problems the site risk classification should be based on off-site contamination criteria. Another commenter requested additional clarification regarding the extent of the work that is needed to identify the likelihood or potential of contamination occurring.
RESPONSE: The usage of the term "likely" is consistent with Senate File 362 terminology. Because of the varying release situations and site conditions it would be extremely time consuming and difficult to provide explicit criteria for evaluating the likelihood of petroleum contamination impacting public health and the environment. Considerably more detailed field work would be required as well, if that approach was taken. The groundwater professional should have the expertise to make the determinations required.
RECOMMENDATION: Recommend no change in the rule.
11. COMMENT SUBMITTED BY: Iowa Retail Gasoline and Automotive Trades Association.
COMMENT: The TLV-TWA measurement for benzene should be specifically for on-site occupied structures only.
RESPONSE: Restricting the TLV-TWA measurement for benzene to on-site structures would not adequately protect health and safety of individuals occupying off-site structures.
RECOMMENDATION: Recommend no change in the rule.
12. COMMENT SUBMITTED BY: Iowa Retail Gasoline and Automotive Trades Association.

COMMENT: If a PVC drinking water transmission line is in contact with contaminated soil, the pipeline should be replaced or capped with material that does not allow saturation or absorption.

RESPONSE: We agree that removing or replacing a PVC drinking water transmission line could be considered as a viable option for reclassifying a high risk site to low risk.

RECOMMENDATION: Recommend no change in the rule.

13. COMMENT SUBMITTED BY: Iowa Retail Gasoline and Automotive Trades Association.

COMMENT: The most important factors in the classification of high risk sites should be the extent of the contamination and whether the contamination is moving off-site and the direct effect the contamination has on groundwater which is used as a source for public or private water supply. A contaminated groundwater plume moving off-site should be considered as a higher risk factor than contaminated soil that is stationary and not adversely affecting a water source.

RESPONSE: We have attempted to develop site classification criteria that takes the majority of the factors mentioned by the commenter into consideration. However, Senate File 362 does not provide for contamination being restricted to the release site as a risk criterion.

RECOMMENDATION: Recommend no change in the rule.

14. COMMENT SUBMITTED BY: J. D. Haines, R. E. Blattert & Associates.

COMMENT: Many states are getting away from a total petroleum hydrocarbon soil cleanup standard. Recommended IDNR consider a more risk based type of standard such as benzene, toluene, ethylbenzene xylene, PAHs, etc..

RESPONSE: The primary focus of this rulemaking was to incorporate the requirements of Senate File 362. A considerable amount of staff time would be required to do the research and develop the documentation necessary to support a modification of the cleanup standard. The Iowa cleanup standards are consistent with most other state standards.

RECOMMENDATION: Recommend no change in the rule.

15. COMMENT SUBMITTED BY: J. D. Haines, R. E. Blattert & Associates.

COMMENT: One of the high risk classification criteria (135.8(4)b.(5)) is based on high risk action levels in trenches. However, 5 PPB benzene standard is somewhat restrictive in a cable trench or an underground electrical trench.

RESPONSE: The criterion was developed due to the potential for the utility conduit to act as a pathway for contamination migration.

RECOMMENDATION: Recommend no change in the rule.

16. COMMENT SUBMITTED BY: J. D. Haines, R. E. Blattert & Associates; and Daniel Flaig, Dahl & Associates, Inc.

COMMENT: The monitoring at low risk sites should be quarterly the first three years to get seasonal variations.

RESPONSE: Monitoring schedules specified in the rules are the maximum required by SF 362. We do not have the authority to change the monitoring frequency to quarterly.

RECOMMENDATION: Recommend no change in the rule.

17. COMMENT SUBMITTED BY: Jonathan C. Lamptey, Microbial Environmental Services, Inc.
COMMENT: Subrule 135.8(2) appears to indicate that the submittal of a Site Cleanup Report is at the discretion of the department. A Site Cleanup Report should always be required.
RESPONSE: We anticipate the Site Cleanup Report (SCR) will always be required, however the SCR requirement could be waived in situations where the contamination is limited and the tank owner is paying for the cleanup and does not want to consider site monitoring.
RECOMMENDATION: Recommend no change in the rule.
18. COMMENT SUBMITTED BY: Jonathan C. Lamptey, Microbial Environmental Services, Inc.
COMMENT: The specific monitoring requirement for low risk sites is not specified in the rule. The specific monitoring frequencies should be established and placed in the rule.
RESPONSE: The monitoring frequencies specified in subrule 135.8(5)d are the maximum required by Senate File 362. Due to the variability in site conditions and release circumstances it would be difficult to develop rules that would accommodate all situations. We have decided to rely on the expertise of the groundwater professionals in developing monitoring proposals tailored to the specific site. Subrule 135.8(5)d requires the submittal of a plan containing a sufficient number of sampling points to ensure the detection of any significant movement or increase in contamination concentration.
RECOMMENDATION: Recommend no change in the rule.
19. COMMENT SUBMITTED BY: Jonathan C. Lamptey, Microbial Environmental Services, Inc.
COMMENT: Excavation and incineration are not cost effective remedial technologies. The pressures on our landfills and the high cost of incineration make them less attractive to most regulators and the EPA. In situ treatments are the preferred techniques for treating soil and groundwater contamination.
RESPONSE: We have not prescribed treatment methods in this rulemaking. Treatment technologies will be evaluated based on the information provided as required by subrule 135.5.
RECOMMENDATION: Recommend no change in the rule.
20. COMMENT: We received questions and comments concerning subrule 11.6.
RESPONSE: This subrule is not under this department's authority or a part of this rulemaking. These questions and comments were sent to the Iowa Comprehensive Petroleum Underground Storage Tank Board.
21. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa
COMMENT: An informal process to appeal risk designations should be added to the rule. The commenter recommended creating a "review board" comprised of IDNR staff and individuals outside the department.
RESPONSE: A formal appeal process exists to resolve legal issues. We are not considering a review board comprised of members outside the department because House File 362 provides the department with the authority to regulate the classification of sites. We are revising

subrule 135.8(4)e to provide for informal negotiations to discuss risk classifications.

RECOMMENDATION: Recommend subrule 135.8(4)e be changed by adding the following sentence to the beginning of the first paragraph of the subrule: The department may hold informal negotiations to resolve disagreements concerning a site risk classification.

22. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.

COMMENT: The Iowa Comprehensive Petroleum Underground Storage Tank Board's administrative rule pertaining to "other approved tank systems" is open for public comment. Proposed subrule 135.3(2) may require modification.

RESPONSE: We are aware of this situation.

RECOMMENDATION: Modify the proposed subrule 135.3(2)a(3) as follows: Closure requirements under 135.8(455B), including applicable requirements for corrective action under 135.7(455B). Replacement or upgrade of a tank on a petroleum contaminated site classified as a high or low risk in accordance with subrule 135.8(3) shall be equipped with a secondary containment system with monitoring of the space between the primary and secondary containment structures in accordance with 135.5(4)"g" or other approved tank system or methodology approved by the Iowa Petroleum Underground Storage Tank Fund Board.

23. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.

COMMENT: Insert "identified" before "other" in subrule 135.6(1). Tank owners and operators deserve to know who is reporting the release.

RESPONSE: The department's records are open to the public and can be inspected to determine who reported the release.

RECOMMENDATION: Recommend no change in the rule.

24. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.

COMMENT: Insert "identified" before "another party" in subrule 135.6(2). Tank owners and operators deserve to know who is reporting off-site impacts from a petroleum release.

RESPONSE: The department's records are open to the public and can be inspected to determine who reported observing the off-site impacts of a petroleum release.

RECOMMENDATION: Recommend no change in the rule.

25. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.

COMMENT: Add "and will endanger human health" to subrule 135.8(4)b(1). Also, somewhere in the risk factor a judgement needs to be made if this condition is expected to persist.

RESPONSE: The threshold limit value-time weighted value (TLV) is the time-weighted average concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all individuals may be repeatedly exposed, day after day, without adverse effect. The site ranking criterion implies a threat to public health if the condition exists.

In addition, benzene is a suspected human carcinogen and all exposures should be kept to a minimum. Subrule 135.8(4)e provides for the reclassification of a site if vapor abatement is successful.
RECOMMENDATION: Recommend no change in the rule.

26. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.
COMMENT: Subrule 135.8(4)b(2) should address the persistence of explosive vapors.
RESPONSE: Groundwater professionals should provide a detailed discussion of vapor occurrences and explanation if vapors are of a transitory nature. If it can be adequately documented that the vapors are not persistent, a low risk site ranking is possible. In addition, subrule 135.8(4)e provides for reclassification of a site if vapor abatement is successful.
RECOMMENDATION: Recommend no change in the rule.
27. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.
COMMENT: A comment was received in support of the subrule 135.8(4)e which allows for the reclassification of sites when contaminated soil in contact with utility lines is removed.
RECOMMENDATION: Recommend no change in the rule.
28. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.
COMMENT. Suggested the site ranking factors discussed in subrules 135.8(4)b(8), (10), (11) and (12) should apply only to drinking water sources.
RESPONSE. Senate File 362 specifies a site must be considered high risk if a public or private water source is contaminated or is likely to be contaminated to the extent it is unfit for human consumption. The wording in the site classification factors are consistent with SF 362.
RECOMMENDATION. Recommend no change in the rule.
29. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.
COMMENT: Subrule 135.8(4)b(9) should contain a provision requiring a judgement as to the potential of the release reaching a karst area.
RESPONSE: We are modifying the subrule to allow a site to be classified low risk if a groundwater professional can satisfactorily demonstrate that groundwater in the karst area is adequately protected from the petroleum release.
RECOMMENDATION. Modify subrule 135.8(4)b(9) as follows:(7) The petroleum release occurred in an area of fractured limestone or karst topography (i.e., topography formed on limestone, gypsum and other rocks by dissolution and characterized by sinkholes, caves and underground drainage). A site may be classified low risk if the groundwater professional can demonstrate that protected groundwater sources in the area of the petroleum release will not be impacted by the contamination to the extent that the conditions in subrule 135.8(4)b(10) occur. Factors that must be considered in evaluating the impact of the petroleum contamination include area hydrogeologic

characteristics; separation distance between the contaminated zone and protected groundwater sources; soil permeability and transmissivity; overburden thickness and contamination concentration and the persistence, chemical characteristics and migration potential of the released substance.

30. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.

COMMENT. Suggested subrule 135.8(4)b(14) be modified by inserting the words "likely to" to replace the mandate that the groundwater professional prove that contaminated soils will not affect a water aquifer. The commenter indicated professional judgement should be a consideration in evaluating the geologic factors at UST sites. The commenter also suggested the word "drinking" be inserted prior to the word "aquifer".

RESPONSE. The subrule contains a number of assumptions (i.e., hydraulic conductivity, separating material thickness, etc.) designed to protect water sources. It would not be prudent to compound the uncertainty of these assumptions by allowing groundwater professionals the latitude of making additional estimates of the likelihood of groundwater contamination occurring. The subrule allows a site to be classified low risk if the groundwater professional can demonstrate with hydrogeological and risk assessment data that the separating material will inhibit or prevent contaminant migration. In addition, Senate File 362 specifies the site ranking criteria must be based on the impact to a private or public water source. We do not have the authority to limit the criteria to drinking water sources.

RECOMMENDATION. Recommend no change in the rule be made based on the comment received.

31. COMMENT SUBMITTED BY: James A. Cunningham, Terracon Environmental, Inc.; and Paul Jacobson and Larry Steburg, MER Engineering.

COMMENT. The commenters indicated that 135.8(4)b(14) should be modified to describe the types of tests that must be performed to measure hydraulic conductivity of the separating or contaminated material unsaturated zone.

RESPONSE. We have added the definition for hydraulic conductivity (subrule 135.2) that discusses testing methods. The department has also noted subrule 135.8(4)b(14) is unclear because two different hydraulic conductivities are listed. We are modifying the subrule to provide for uniformity in the hydraulic conductivities listed.

RECOMMENDATION. Modify subrule 135.8(4)b(14) to read as follows: The material separating groundwater which is serving as a public or private water source or which is a protected groundwater source from soil with a total organic hydrocarbon level greater than 100 mg/kg has a hydraulic conductivity greater than 10^{-4} meters per day. The separating material must have a hydraulic conductivity less than or equal to 10^{-4} meters per day, a minimum thickness of three meters, and be free of subsurface discontinuities between the contamination zone and the groundwater for the site not to be classified high risk.

The site will be classified as low risk if the groundwater professional can demonstrate with hydrogeological and risk assessment data that the separating material will prevent or inhibit the

migration of contaminants to the groundwater to the extent that a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code) or in the absence of a maximum contaminant level an action level, (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) will not be exceeded. A sufficient number of measurements of the hydraulic conductivity shall be made to accurately identify the hydrogeologic conditions of the separating material under the full areal extent of the contamination zone. Measurements shall be made at a minimum of two locations. The distance between adjacent measurement locations shall not exceed 100 feet. The department may require additional measurements based on the hydrogeologic complexity of the site.

Add the following definition to subrule 135.2: Hydraulic conductivity means the rate of water movement through soil measured in meters per day (m/d) as determined by the following methods: for saturated soil, the Bouwer-Rice Method or equivalent methods shall be used: for an unsaturated soil, use a Guelph permeameter or an equivalent in situ constant-head permeameter in a boring finished above the water table. If the in situ method can not be used for unsaturated soil because of depth or if the soil is homogeneous and lacks flow-conducting channels, fractures, cavities, etc., then laboratory measurement of hydraulic conductivity is acceptable.

If laboratory measurements are used, collect undisturbed soil samples using a thin-walled tube sampler in accordance with American Society of Testing and Materials (ASTM) Standards D1587. Samples shall be clearly marked, preserved and transported to the laboratory. The laboratory shall measure hydraulic conductivity using a constant-head permeameter in accordance with ASTM Standard D2434 or a falling-head permeameter in accordance with accepted methodology.

32. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.

COMMENT. Suggested the 50 feet separation distance cited in subrule 135.8(4)e is unreasonable. Recommended allowing the groundwater professional to prepare a solution for alleviating the contamination impacts in subrule 138.8(4)b(4), (5) and (6).

RESPONSE. We could have responded to the comment more directly if we had been provided a basis for the commenter's conclusion that the separation distance was unreasonable. We do not agree the separation distance is unreasonable, especially when applying the distance to PVC drinking water transmission lines. A site could be classified as high risk according to subrule 138.8(4)b(4), (5) and (6). However, the groundwater professional could provide recommendations for reclassification such as the relocation of utility lines.

RECOMMENDATION. Recommend no change in the rule.

33. COMMENT SUBMITTED BY: E. A. Kistenmacher, Petroleum Marketers of Iowa.

COMMENT. Can a high risk site be reclassified to low risk? Should this issue be addressed in the rule? Some water remediation efforts may become stalled in reducing contaminant levels and the site may qualify for another examination of its classification.

RESPONSE. Subrule 138.8(4)e provides for the reclassification of sites. We anticipate the situation described may occur and would welcome a reevaluation of site characteristics to determine if the site classification is appropriate.

RECOMMENDATION. Recommend no change in the rule.

34. COMMENT: The department has noted that the investigation area stated in subrule 135.8(3)e is not consistent with the groundwater contamination plume separation distance in subrule 135.8(4)b(12).

RECOMMENDATION. To provide for consistency, modify subrule 135.8(4)b(12) to read as follows: The contaminated groundwater plume is within 100 feet of natural or man-made structures or conduits that could allow the vertical or horizontal migration of contaminants to a protected groundwater source that is used as a public or private water source.

35. COMMENT SUBMITTED BY: Alan Foster, Sierra Club.

COMMENT: Recommended the department reexamine subrule 135.8 and endeavor to make it internally consistent and conservative of remedial funds.

RESPONSE. Subrule 138.8 was reviewed and revised as a result of more specific comments received.

RECOMMENDATION. Recommend no additional changes in the rules be made as a result of this general comment.

36. COMMENT SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.

COMMENT: The notification requirements in subrule 135.8(7) will cost IDNR staff time and publication dollars. Most nearby property owners are contacted during the assessment phase of the investigation if off-site contamination is evident.

RESPONSE. The notification requirements were not within the focus of this rulemaking. These requirements were effective October 24, 1988, when the department adopted the federal underground storage tank technical requirements contained in 40 CFR 280 and 281 (September 23, 1988). The notification requirements are the minimum required by federal rules.

RECOMMENDATION. Recommend no change in the rule.

37. COMMENT: The department has noted the term "correction level" used in the third sentence of subrule 135.8(4)e needs to be modified to clearly reflect the correct terminology.

RECOMMENDATION. Modify subrule 135.8(4) by changing the term "correction level" to "corrective action level".

38. COMMENT SUBMITTED BY: James A. Cunningham, Terracon Environmental, Inc.

COMMENT: Does the soil contamination plume map (135.8(3)g) only address soil in the unsaturated zone?

RESPONSE: Yes. The subrule will be modified to clarify this requirement

RECOMMENDATION: Modify subrule 135.8(3)g as follows: Soil Contamination Plume Maps. Provide contamination plume map or maps depicting the full extent of soils in the unsaturated zone exceeding

the soil contamination corrective action level under 135.7(8) and the levels of contamination within the plume.

RESPONSE TO QUESTIONS

AMENDMENTS TO CHAPTER 135 OF THE IOWA ADMINISTRATIVE CODE

1. QUESTION SUBMITTED BY: James A. Cunningham, Terracon Environmental, Inc.
QUESTION: Clarify the phrase "excavation zone or the UST site" (135.8b(1) & (2)).
RESPONSE: Excavation zone refers to the tank and piping excavation. UST site refers to locality surrounding the tank site.
2. QUESTIONS SUBMITTED BY: James A. Cunningham, Terracon Environmental, Inc.
QUESTION: A number of questions were received concerning OSHA health and safety requirements (135.8(3)p).
RESPONSE: We are not responsible for enforcing OSHA requirements and suggest questions regarding their applicability be referred to the State Bureau of Labor.
3. QUESTION SUBMITTED BY: James A. Cunningham, Terracon Environmental, Inc.
QUESTION: Are site checks (135.3(1)e) to be conducted by a groundwater professional?
RESPONSE. Yes.
4. QUESTION SUBMITTED BY: Jonathan C. Lamptey, Microbial Environmental Services, Inc.
QUESTION: What happens to individuals that proceed with cleanup activities without prior approval from the DNR/Iowa Comprehensive Petroleum Underground Storage Tank Board?
RESPONSE: The department's response would depend on the circumstances. The initiation of an enforcement action is an option. Questions concerning the Iowa Comprehensive Petroleum Underground Storage Tank Board response to this situation should be addressed that group.
5. QUESTION SUBMITTED BY: Jonathan C. Lamptey, Microbial Environmental Services, Inc.
QUESTION: If the boundary of the contamination plume is identified (subrule 135.8(3)g & j), is it necessary to perform sampling within the boundary?
RESPONSE: It is important to collect enough samples within the plume to characterize the levels of contamination present at the site. This data can provide an insight in predicting the potential and impact of contamination migration. In many instances this information is also necessary to design remediation systems.
6. QUESTION SUBMITTED BY: Jonathan C. Lamptey, Microbial Environmental Services, Inc.

QUESTION: The Site Cleanup Report contains site remediation recommendations. Who reviews cost effectiveness information and determines if the proposed corrective action is the best available treatment technology?

RESPONSE: The Iowa Comprehensive Petroleum Underground Storage Tank Board will have the primary responsibility for reviewing the cost information. IDNR will review the data provided with the remediation options and determine if the selected treatment technology is consistent with the information provided. The two entities will work together closely in an effort to keep such occurrences at a minimum.

7. QUESTION SUBMITTED BY: Jonathan C. Lamptey, Microbial Environmental Services, Inc.

QUESTION: Can a Site Cleanup Report be approved by IDNR and not be approved by the Iowa Comprehensive Petroleum Underground Storage Tank Board?

RESPONSE: Yes. The IDNR will review the reports for compliance with the technical requirements and the Iowa Comprehensive Petroleum Underground Storage Tank Board for grant eligibility. The IDNR could approve a report, while the Iowa Comprehensive Petroleum Underground Storage Tank Board may determine all the costs are not eligible for funding. Also the Iowa Comprehensive Petroleum Underground Storage Tank Board may find a report acceptable with regard to costs, while the IDNR finds it lacking technically.

8. QUESTIONS SUBMITTED BY: Jonathan C. Lamptey, Microbial Environmental Services, Inc.

QUESTION: Mr. Lamptey submitted a number of questions concerning subrule 11.6.

RESPONSE: This subrule is part of rulemaking initiated by the Iowa Comprehensive Petroleum Underground Storage Tank Board. Questions concerning the subrule were referred to the Iowa Comprehensive Petroleum Underground Storage Tank Board.

9. QUESTION SUBMITTED BY: Daniel Flaig, Dahl & Associates, Inc.

QUESTION: Who will review the Site Cleanup Reports and will these individuals be certified as groundwater professionals?

RESPONSE: Current plans are to have IDNR conduct the review of Site Cleanup Reports. The department is currently negotiating with the Iowa Comprehensive Petroleum Underground Storage Tank Board to assist in the review by funding contractor services. We anticipate the contractor will have staff supervisors that are registered groundwater professionals.

10. QUESTION SUBMITTED BY: Daniel Flaig, Dahl & Associates, Inc.

QUESTION: What financial assistance is available to facilities not covered under the reimbursement program?

RESPONSE: The federal LUST Trust fund is available for site investigation and remediation, however the department is required to recover costs if the tank owner is financially able to assist in the investigation.

11. QUESTION SUBMITTED BY: Daniel Flaig, Dahl & Associates, Inc.

QUESTION: Does the price structure established by Williams & Company reflect IDNR requirements?

RESPONSE: This question should be addressed to the Iowa Comprehensive Petroleum Underground Storage Tank Board. It is our understanding they attempt to maintain a price structure that reflects IDNR requirements.

12. QUESTION SUBMITTED BY: Daniel Flaig, Dahl & Associates, Inc.
QUESTION: What is the registration fee for the groundwater professionals used for?
RESPONSE: The administrative costs of the registration program.
13. QUESTION SUBMITTED BY: Daniel Flaig, Dahl & Associates, Inc.
QUESTION: Why was the certification responsibility of UST installers and inspectors transferred to the Comprehensive Petroleum Underground Storage Tank Board? Will UST removers be required to be certified?
RESPONSE: By statute the Comprehensive Petroleum Underground Storage Tank Board is responsible for the certification process. Questions concerning the certification of UST installers should be addressed to the Comprehensive Petroleum Underground Storage Tank Board.
14. QUESTION SUBMITTED BY: Daniel Flaig, Dahl & Associates, Inc.
QUESTION: Are any of the costs for secondary containment eligible for support funds?
RESPONSE: This question should be addressed to the Comprehensive Petroleum Underground Storage Tank Board.
15. QUESTION SUBMITTED BY: Daniel Flaig, Dahl & Associates, Inc.
QUESTION: When will the IDNR forms and/or formats be available?
RESPONSE: The administrative rules have an impact on the development of the Site Cleanup Report. We anticipate having the Site Cleanup Report available for distribution within one month after the rules are adopted by the Commission. We also anticipate modifying the Report format based on comments received from consultants after they have the opportunity to use the document.
16. QUESTION SUBMITTED BY: Daniel Flaig, Dahl & Associates, Inc.
QUESTION: If IDNR is the regulatory authority reviewing Site Cleanup Reports why is Comprehensive Petroleum Underground Storage Tank Board also reviewing them?
RESPONSE: The Comprehensive Petroleum Underground Storage Tank Board has an interest in the cost information due to the reimbursement program for site investigations and cleanups.
17. QUESTION SUBMITTED BY: Daniel Flaig, Dahl & Associates, Inc.
QUESTION: Is IDNR monitoring the efficiency of the soil treatment at American Soils in Marion?
RESPONSE: The Linn County Health Department is monitoring air emissions. IDNR receives reports from American Soils concerning monitoring conducted on untreated and treated soils.
18. QUESTION SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.

QUESTION: Do total dissolved solids have to be determined with a laboratory test (protected groundwater source definition subrule 35.2)?

RESPONSE: Yes.

19. QUESTION SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.

QUESTION: Does the vertical extent of soil contamination need to be determined? Some rumors persist of only drilling to the apparent groundwater level.

RESPONSE: The vertical and horizontal extent of soil and groundwater contamination must be determined. We question the validity of soil samples collected below the groundwater level in that groundwater contamination may bias the sample results.

20. QUESTION SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.

QUESTION. Subrule 135.5(4) (Methods of leak detection for tanks) requires groundwater monitoring wells to be able to detect the presence of at least one-eighth of an inch of free product. What is the basis for the expensive leak detection requirements in subrule 135.3(2) when in many cases the groundwater contamination can be measured only in parts per billion?

RESPONSE. The leak detection requirements in subrule 135.3(2) were required by Senate File 362. IDNR will accept alternative leak detection technology as approved by the Comprehensive Petroleum Underground Storage Tank Board.

21. QUESTION SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.

QUESTION: Subrule 135.3(2) requires specific leak detection technology at LUST sites. What are the leak detection requirements if the site has a low risk classification and the new tanks will be placed in an uncontaminated area?

RESPONSE: We interpret Senate File 362 to require the leak detection technology discussed in subrule 135.3(2) at all leaking underground storage tank sites. Tank owners and operators have the option of requesting a waiver from subrule 135.3(2) through the Comprehensive Petroleum Underground Storage Tank Board.

22. QUESTION SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.

QUESTION: Subrule 135.8(4)b(8) requires sites to be classified as high risk if soils exceeding 100 PPM organic hydrocarbons are within the seasonal high water level of an aquifer (redefined as protected groundwater source). How should this subrule be interpreted if the seasonal high water level is near the land surface as evidenced in the spring of 1991?

RESPONSE: The determination of the high seasonal water level should be based on on-site observations or area hydrological records. In the example cited, the seasonal high water level would be considered at the land's surface.

23. QUESTION SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.
QUESTION: Many utility trenches are in the right of way of roads. Application of subrule 135.8(4)e would require the removal and replacement of the road. Also would this excavation require 1 sample per 100 square feet of excavated area since the site would be monitored per the low risk requirements?
RESPONSE: The consultant may want to consider other alternatives if the excavation will result in the relocation of a road. We have not established a specific monitoring requirement for the example cited.
24. QUESTION SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.
QUESTION: What amount of contamination movement would be considered significant(subrule 135.8(4)d)?
RESPONSE: This determination will be based on a site by site evaluation.
25. QUESTION SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.
QUESTION. What is considered a practical treatment option? Some sites with a high risk classification may not have any practical solutions.
RESPONSE. The "practical" treatment option will vary with site conditions and phases of contamination present. The best option for site conditions will be selected by the groundwater professional. We do not agree with the questioner's assertion that practical treatment options are not available for some high risk sites.
26. QUESTION SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.
QUESTION: Subrules 135.8 (5) and (6) appear to require two complete approved designs of remedial activities. We were lead to believe the Comprehensive Petroleum Underground Storage Tank Board may want to let bids for the complete remedial design. The Site Cleanup Report was intended to include budgets for the cleanup to aid in the prioritization of remedial costs.
RESPONSE: The design for the best available treatment option would be submitted after the Site Cleanup Report is approved. Questions concerning bids for complete remedial system design and prioritization of remedial costs should be addressed to the Comprehensive Petroleum Underground Storage Tank Board.
27. QUESTION SUBMITTED BY: Paul Jacobson and Larry Steburg, MER Engineering.
QUESTION: Does the department notify the public of a change of status of a site (subrule 135.8(7)?
RESPONSE: The public is notified when a site is classified as high or low risk, ~~whether it is the initial classification or a subsequent reclassification.~~

IOWA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION COMMISSION

ITEM 12

DECISION

TOPIC: Adoption and File Emergency: Amendments to Chapter 135, technical standards for underground storage tanks

The department requests adoption and emergency filing of the attached amendments to Chapter 135, "Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks." The commission is also requested to rescind the amendments published emergency in ARC 2322A in the September 1991 Iowa Administrative Bulletin.

The rules establish criteria for the classification of underground storage tank sites on which a release has occurred and corrective action response requirements appropriate to the site classification. New tankcontaminated sites are also required to have secondary containment.

Attached is a summary of the public comments and the departments response. The rules were changed due to the public comments as indicated in the the departments response and the preamble of the attached rules.

In order to limit any more delay in assessing and cleaning up contaminated sites, emergency adoption of the amended rules is recommended.

NOTE: AN ECONOMIC IMPACT STATEMENT FOR THIS RULE, AS REQUESTED BY THE LEGISLATURES ADMINISTRATIVE RULES REVIEW COMMITTEE, WAS PUBLISHED IN THE ADMINISTRATIVE BULLETIN ON FEBRUARY 5, 1992. FINAL ADOPTION OF THIS RULE CANNOT OCCUR UNTIL FIFTEEN DAYS FOLLOWING PUBLICATION OF THE ECONOMIC IMPACT STATEMENT. THE COMMISSION WILL BE ASKED TO SET A SPECIAL ELECTRONIC MEETING FOR FEBRUARY 20, 1992, FOR THE PURPOSE OF FINAL ADOPTION OF THIS RULE. THE RULE WILL BE DISCUSSED, HOWEVER, AT THE REGULARLY SCHEDULED COMMISSION MEETING.

Allan E. Stokes
Administrator
Environmental Protection Division

ATTACHMENT

January 28, 1992

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Minutes of the Environmental Protection Commission Meeting

Electronic Meeting February 20, 1992

Wallace State Office Building, Des Moines, Iowa

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February 1992

Environmental Protection Commission Minutes

FEBRUARY 1992 COMMISSION MEETING

The meeting of the Environmental Protection Commission was held in the Wallace State Office Building, Des Moines, Iowa, convening at 10:00 a.m. on February 20, 1992.

MEMBERS PRESENT

Verlon Britt, William Ehm, Richard Hartsuck, Rozanne King, Gary Priebe, Nancylee Siebenmann, and Clark Yeager.

MEMBERS ABSENT

Charlotte Mohr, Margaret Prah1

CALL TO ORDER

Chairperson Hartsuck called the meeting to order at 10:03 a.m. and stated that the meeting is being held to take final action on one item of business, which was presented at a full, in-person meeting on February 17, and it is impractical for the commissioners to travel from various locations in the state to reconvene in person to take this limited action.

ADOPTED AND EMERGENCY FILED RULE--CHAPTER 135 AMENDMENTS,
TECHNICAL STANDARDS FOR UNDERGROUND STORAGE TANKS

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

The department requests adoption and emergency filing of the attached amendments to Chapter 135, "Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks." The commission is also requested to rescind the amendments published emergency in ARC 2322A in the September 1991 Iowa Administrative Bulletin.

The rules establish criteria for the classification of underground storage tank sites on which a release has occurred and corrective action response requirements appropriate to the

site classification. New tank contaminated sites are also required to have secondary containment.

Attached is a summary of the public comments and the departments response. The rules were changed due to the public comments as indicated in the the departments response and the preamble of the attached rules.

In order to limit any more delay in assessing and cleaning up contaminated sites, emergency adoption of the amended rules is recommended.

NOTE: AN ECONOMIC IMPACT STATEMENT FOR THIS RULE, AS REQUESTED BY THE LEGISLATURES ADMINISTRATIVE RULES REVIEW COMMITTEE, WAS PUBLISHED IN THE ADMINISTRATIVE BULLETIN ON FEBRUARY 5, 1992. FINAL ADOPTION OF THIS RULE CANNOT OCCUR UNTIL FIFTEEN DAYS FOLLOWING PUBLICATION OF THE ECONOMIC IMPACT STATEMENT. THE COMMISSION WILL BE ASKED TO SET A SPECIAL ELECTRONIC MEETING FOR FEBRUARY 20, 1992, FOR THE PURPOSE OF FINAL ADOPTION OF THIS RULE. THE RULE WILL BE DISCUSSED, HOWEVER, AT THE REGULARLY SCHEDULED COMMISSION MEETING.

(A copy of the Responsiveness Summary is on file in the department's Records's Center)

(Rule is shown on the following 20 pages)

ENVIRONMENTAL PROTECTION COMMISSION
Adopted and Filed Emergency After Notice

Pursuant to the Authority of Iowa Code section 455B.474, the Environmental Protection Commission adopts amendments to Chapter 135, "Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks."

At a public meeting on February 20, 1992, the Environmental Protection Commission adopted the following amendments to Chapter 135. The amendments were published as a Notice of Intended Action, ARC 2325A, and as emergency rules, ARC 2322A, in the September 18, 1991, Iowa Administrative Bulletin. The Commission has rescinded the emergency rules published as ARC 2322A, in the September 17, 1991, bulletin. The Notice of Intended Action solicited public comment and public hearings were held on October 22, 23 and 24, 1991. Revisions have been made to the proposed amendments in response to public comment.

The rules in ARC 2325A established criteria for the classification of underground storage tank sites on which a release of regulated substances had occurred and corrective action response requirements appropriate to the site classification. New tanks installed at contaminated sites were also required to have secondary containment.

In ITEM 1, the definition of "aquifer" has been deleted and a new definition "protected groundwater source" added. "Protected groundwater source" has been substituted for aquifer along with some sentence modification in the rule amendments. The new definition is intended to establish what groundwater sources have the potential to be used as a public or private water supply. This was needed since there were differing interpretations of the meaning of aquifer. The substitutions have occurred in subparagraph 135.8(4)"a"(2) and subparagraphs 135.8(4)"b"(8), (11), and (12).

A definition for "hydraulic conductivity" has been added to give definite procedures for its determination as used in the rules and within the definition of "protected groundwater source." The definition "Best available technology" has been modified by adding "capital and operating costs" as a parameter that is considered in determining the best available technology and changing the word "effectively" to the word "appropriately".

In ITEM 3, paragraph 135.3(2)"a" has been amended by striking the last two sentences. The paragraph requires tanks installed at contaminated sites to have secondary containment with monitoring of the interstitial space. The stricken sentences referred to alternative tank systems that could be installed in place of secondary containment. The paragraph now only references the Iowa Comprehensive

Petroleum Underground Storage Tank Fund Board's authority to approve alternative tank systems.

In ITEM 11, subrule 135.8(3), paragraph "g" has been modified by adding "in the unsaturated zone" to define the underground zone in which soil contamination must be identified on the soil contamination plume map.

Subrule 135.8(3) paragraph "n" has been changed by removing the last sentence since the methodology for determining hydraulic conductivity is now specified.

Subrule 135.8(4), subparagraphs "b"(7) and "b"(13) have been changed by reducing the distance contaminated soil and groundwater must be from an active well (from 2,000 feet to 1,000 feet) for a site to be considered low risk. Two sentences have also been added to the end of the paragraph that allow a groundwater professional to demonstrate no impact by the contamination will occur to an active well due to site conditions.

Subrule 135.8(4), subparagraph "b"(12) has been changed by reducing the distance from 150 feet to 100 feet that a contamination plume can be from a natural or man-made conduit to a protected groundwater source and still be considered low risk.

Subrule 135.8(4), subparagraph "b"(14) has been stricken and replaced with a new subparagraph that more clearly states the requirements.

Subrule 135.8(4), subparagraph "e" has been modified by adding a new first sentence that states the department may hold informal negotiations to resolve disagreements concerning site risk classification. In the third sentence, "correction" was replaced with "corrective action" to correct a wording error.

The term "parts per million" when applied to soils in the rules has been changed to "mg/kg" (milligrams per kilogram) to more precisely define the term. This has occurred in Subparagraphs 135.8(4)"b"(4), (7) and (8), paragraphs 135.8(4)"c" and "d", and paragraph 135.8(5)"c".

A new ITEM 15 has been added that amends subrule 135.9(3), paragraph "a" by adding ethylbenzene as a compound that must be analyzed for in groundwater samples at the time of tank closure. Ethylbenzene was added to the chart of corrective action levels in new subrule 135.8(8) after a maximum contaminant level (MCL) was adopted in the drinking water standards. This paragraph was inadvertently not changed to agree with the new action level in subrule 135.8(8).

In addition, pursuant to Iowa Code section 17A.5, the commission finds these rules should be effective upon filing, February 21, 1992, as they confer a benefit on the public.

These rules are intended to implement 1991 Iowa Acts, Senate File 362, sections 5 and 6.

The following amendments are adopted:

ITEM 1. Amend rule 135.2 by deleting "aquifer" and adding the following new definitions:

"Best available technology" means those practices which most appropriately remove, treat, or isolate contaminants from groundwater, soil or associated environment, as determined through professional judgement considering actual equipment or techniques currently in use, published technical articles, site hydrogeology and research results, engineering and groundwater professional reference materials, consultation with experts in the field, capital and operating costs, and guidelines or rules of other regulatory agencies.

"Best management practices" means maintenance procedures, schedule of activities, prohibition of practices, and other management practices, or a combination thereof, which, after problem assessment, is determined to be the most effective means of monitoring and preventing additional contamination of the groundwater and soil.

"Hydraulic conductivity" means the rate of water movement through the soil measured in meters per day(m/d) as determined by the following methods. For a saturated soil, the Bouwer-Rice method or its equivalent shall be used. For unsaturated soil, use a Guelph permeameter or an equivalent in situ constant-head permeameter in a boring finished above the water table. If an in situ method can not be used for unsaturated soil because of depth or if the soil is homogeneous and lacks flow-conducting channels, fractures, cavities, etc., laboratory measurement of hydraulic conductivity is acceptable.

If laboratory methods are used, collect undisturbed soil samples using a thin-walled tube sampler in accordance with American Society of Testing and Materials (ASTM) Standard D1587. Samples shall be clearly marked, preserved and transported to the laboratory. The laboratory shall measure hydraulic conductivity using a constant-head permeameter in accordance with ASTM Standard D2434 or a falling-head permeameter in accordance with accepted methodology.

"Protected groundwater source" means a saturated bed, formation, or group of formations which has a hydraulic conductivity of at least 0.44 meters per day(m/d) and a total dissolved solids of less than 2,500 milligrams per liter(mg/l).

"Site assessment investigation" means an investigation conducted by a registered groundwater professional to determine relevant site historical data, the types, amounts, and sources of petroleum contaminants present, hydrogeological characteristics of the site, full vertical and horizontal extent of the contamination in soils and groundwater, direction and rate of flow of the

contamination, ranges of concentration of the contaminants by analysis of soils and groundwater, the vertical and horizontal extent of the contamination exceeding department standards, and the actual or potential threat to public health and safety and the environment.

"Site cleanup report" means a written report, prepared by a registered groundwater professional, which includes all relevant information, methodologies, findings and conclusions from a site assessment investigation, site classification and recommended corrective action based on the site classification.

ITEM 2. Amend subrule 135.3(1) paragraph "e" as follows:

e. Certification of installation. All owners and operators must ensure that one or more of the following methods of certification, testing, or inspection are used to demonstrate compliance with paragraph "d" of this subrule by providing a certification of compliance on the UST notification form in accordance with 135.3(3).

(1) The installer has been certified by the tank or piping manufacturers; or

(2) The installer has been certified or licensed by the department Iowa petroleum underground storage tank fund board; or

(3) The installation has been inspected and certified by a registered professional engineer with education and experience in UST system installation; or

(4) The installation has been inspected and approved by the department an inspector certified or licensed by the Iowa petroleum underground storage tank fund board; or

(5) All work listed in the manufacturer's installation checklists has been completed; or

(6) The owner and operator have complied with another method for ensuring compliance with paragraph "d" that is determined by the department to be no less protective of human health and environment.

ITEM 3. Amend subrule 135.3(2) paragraph "a" as follows:

a. Alternatives allowed. Not later than December 22, 1998, all existing UST systems must comply with one of the following requirements:

(1) New UST system performance standards under 135.3(1);

(2) The upgrading requirements in paragraphs "b" and "d" below; or

(3) Closure requirements under 135.89(455B), including applicable requirements for corrective action under 135.7(455B) and 135.8(455B).

Replacement or upgrade of a tank on a petroleum contaminated site classified as a high or low risk in accordance with subrule 135.8(3) shall be a double wall tank or a tank equipped with a secondary containment system with

monitoring of the space between the primary and secondary containment structures in accordance with 135.5(4)"g" or other approved tank system or methodology approved by the Iowa petroleum underground storage tank fund board.

ITEM 4. Amend subrules 135.6(1) and 135.6(2) as follows:

135.6(1) Reporting of suspected releases. Owners and operators of UST systems must report to the department within 24 hours, or within 6 hours in accordance with 567-Chapter 131 if a hazardous condition exists as defined in 567-131.1(455B), or another reasonable time period specified by the department, and follow the procedures in ~~135-6(3)~~ 135.8(1) for any of the following conditions:

a. The discovery by owners and operators or others of released regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water).

b. Unusual operating conditions observed by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, or an unexplained presence of water in the tank), unless system equipment is found to be defective but not leaking, and is immediately repaired or replaced; and

c. Monitoring results from a release detection method required under 135.5(2) and 135.5(3) that indicate a release may have occurred unless:

(1) The monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial results; or

(2) In the case of inventory control, a second month of data does not confirm the initial result.

135.6(2) Investigation due to off-site impacts. When required by the department, owners and operators of UST systems must follow the procedures in ~~135-6(3)~~ 135.8(1) to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface and drinking waters) that has been observed by the department or brought to its attention by another party.

ITEM 5. Rescind and reserve existing subrule 135.6(3).

ITEM 6. Amend subrule 135.7(2) as follows:

135.7(2) Initial response. Upon confirmation of a release in accordance with ~~135-6(3)~~ 135.8(1) or after a release from the UST system is identified in any other manner, owners and operators must perform the following initial response actions within 24 hours of a release or within another reasonable period of time specified by the department.

ITEM 7. Amend subrule 135.7(3)"a"(5) as follows:

135.7(3)"a"(5) Measure for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and the source of the release have been confirmed in accordance with the site check required by ~~135.6(3)"b"~~ 135.8(1) or the closure site assessment of ~~135.8(3)"a"~~ 135.9(3)"a". In selecting sample types, sample locations, and measurement methods, the owner and operator must consider the nature of the stored substance, the type of backfill, depth to groundwater and other factors as appropriate for identifying the presence and source of the release; and

ITEM 8. Amend subrule 135.7(5) as follows:

135.7(5) Free product removal. At sites where investigations under 135.7(3) "a"(6) indicate the presence of free product, owners and operators must remove the free product to the maximum extent practicable as determined by the department while continuing, as necessary, any actions initiated under 135.7(2) to 135.7(4), or preparing for actions required under ~~135.7(6)-and-135.7(7)~~ 135.8(455B). In meeting the requirements of this subrule, owners and operators must:

a. Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeological conditions at the site, and that properly treats, discharges or disposes of recovery by-products in compliance with applicable local, state and federal regulations;

b. Use abatement of free product migration as a minimum objective for the design of the free product removal system;

c. Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

d. Unless directed to do otherwise by the department, prepare and submit to the department, within 45 days after confirming the release, a free product removal report that provides at least the following information:

(1) The name of the person(s) responsible for implementing the free product removal measures;

(2) The estimated quantity, type, and thickness of free product observed or measured in the monitoring, boreholes, and excavations;

(3) A schematic and narrative description ~~The-type of the~~ free product recovery system used;

(4) ~~Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;~~

(5) A schematic and narrative description ~~The-type of the~~ treatment system ~~applied-to,~~ and the effluent quality expected from any discharge;

(6) The steps that have been or are being taken to obtain necessary permits for any discharge; and

- (7) Disposition of the recovered free product;
- (8) Free product plume map; and
- (9) The estimated volume of free product present, how the volume was calculated, recoverable volume and estimated recovery time.

ITEM 9. Amend subrule 135.7(6) as follows:

135.7(6) Investigations-for-soil-and-groundwater
Conditions requiring site cleanup reports.

a. In order to determine the full extent and location of soils contaminated by the release, and the presence and concentrations of dissolved product contamination in the groundwater, and site risk classification and applicable corrective action response; owners and operators must conduct site assessment investigations of the release, the release site, and the surrounding area possibly affected by the release and prepare a site cleanup report, if any of the following conditions exist:

(1) There is evidence that groundwater wells or surface waters have been affected by the release (e.g., as found during release confirmation or previous corrective action measures);

(2) Free product is found to need recovery in compliance with 135.7(5);

(3) There is evidence that contaminated soils may be in contact with groundwater (e.g., as found during conduct of the initial response measures or investigations required under 135.7(1) to 135.7(5); and

(4) Data obtained during any investigation conducted at the site indicate the soil or groundwater contamination corrective action levels under 135.8(8) have been exceeded;

(5) There is evidence that petroleum substances or vapors are present, or have the potential to be present, in concentrations sufficient to be harmful to public health or cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined space; or

~~(4)~~(6) The department requests an investigation the preparation of a site cleanup report, based on the potential effects of contaminated soil or groundwater on nearby ~~surface-water~~ the environment. and ~~groundwater-resources~~;

b. The owners or operators must submit the information collected under paragraph "a" of this subrule as soon as practicable or in accordance with a schedule established by the department.

ITEM 10. Rescind subrules 135.7(7) through 135.7(10).

ITEM 11. Adopt a new rule 567--135.8(455B) and renumber existing rules 567--135.8(455B) and 567--135.9(455B) as 567--135.9(455B) and 567--135.10(455B), respectively.
567--135.8(455B) Site cleanup report.

135.8(1) Release investigation and confirmation steps.
Unless corrective action is initiated in accordance with

rule 135.8(2)(455B), owners and operators must immediately investigate and confirm all suspected releases of regulated substances requiring reporting under 135.6(1) within seven days, or another reasonable time period specified by the department, using either the following steps or another procedure approved by the department:

a. System test. Owners and operators must conduct tests (according to the requirements for tightness testing in 135.5(4)"c" and 135.5(5)"b") that determine whether a leak exists in that portion of the tank that routinely contains product, or the attached delivery piping or both.

(1) Owners and operators must repair, replace or upgrade the UST system, and begin corrective action in accordance with rule 135.8(2) if the test results for the system, tank, or delivery piping indicate that a leak exists.

(2) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a leak exists and if environmental contamination is not the basis for suspecting a release.

(3) Owners and operators must conduct a site check as described in paragraph "b" of this subrule if the test results for the system, tank, and delivery piping do not indicate that a leak exists but environmental contamination is the basis for suspecting a release.

b. Site check. Owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth of groundwater, and other factors appropriate for identifying the presence and source of the release.

(1) If the test results for the excavation zone or the UST site indicate that a release has occurred, owners and operators must begin corrective action in accordance with rule 135.7(455B) and 135.8(455B);

(2) If the test results for the excavation zone or the UST site do not indicate that a release has occurred, further investigation is not required.

135.8(2) General.

a. At any time after reviewing the information submitted in compliance with 135.7(2) to 135.7(4), the department may require owners and operators to submit additional information or to develop and submit a site cleanup report for responding to contaminated soils and groundwater. If a report is required, owners and operators must submit the report according to a schedule and form or format prescribed by the department. Alternatively, owners and operators may, after fulfilling the requirements of 135.7(2) to 135.7(4), choose to submit a site cleanup report for responding to

contaminated soil and groundwater. In either case, owners and operators are responsible for submitting a site cleanup report that provides adequate protection of human health, safety, and the environment on a form or in a format prescribed by the department. The report must be modified as necessary to meet these standards.

b. The site cleanup report must include, but not be limited to, a detailed discussion of the site assessment investigation procedures and findings, site risk categorization and the corrective or no action response recommendation. The site cleanup report must be submitted in a form or format prescribed by the department.

c. The department will approve the site cleanup report prepared by a registered groundwater professional after determining that implementation of the report will adequately protect human health, safety, and the environment.

135.8(3) Site assessment investigation procedures and findings. The following are the minimum requirements for reporting the results of the site assessment.

a. Site History. Summarization of current and past site ownership, operation, petroleum releases, events that led to the discovery of the contamination and current site status.

b. Topographic Map. A topographic map of the site and surrounding area developed from work done at the site, city surveys where available or USGS maps.

c. Groundwater Contour Map. A groundwater contour map of the site indicating the direction of groundwater flow is required. Groundwater contours and elevations at each data point used for contouring must be labeled. Contours must be consistent with observed water level elevations. It must include a description of groundwater flows and explain any anomalous water levels. Describe any fluctuations in the water level which may occur, with special emphasis on groundwater elevations and geological conditions which may alter the general groundwater gradient or flow directions.

d. Site Maps. Provide two site maps. Map #1 must show the site plan and immediate surrounding area (scale 1 inch = 20 to 50 feet). Map #2 must show the site in relation to general area features (scale 1 inch = 200 to 500 feet). The maps must show, but not be limited to:

(1) Location and content of existing and removed USTs, product lines and dispensers.

(2) Pertinent site features (i.e., buildings, roads, water wells, water ways, sinkholes, utility lines, etc.);

(3) Location of soil borings, monitoring wells and natural and man-made conduits and utility lines.

e. Evaluation of Natural and Man-made Conduits. An evaluation must be made of the potential for all natural and man-made conduits and utility lines located within 100 feet

from the contaminated groundwater or soil, to act as contaminant migration pathways.

f. Free Product Evaluation. A discussion of how free product was dealt with is required if it was identified at the site. If free phase product is encountered during on-site work, notify the department within 24 hours. Free product removal must be conducted in accordance with 135.7(5).

g. Soil Contamination Plume Maps. Provide contamination plume map or maps depicting the full extent of soils in the unsaturated zone exceeding the soil contamination corrective action level under 135.8(8) and the levels of contamination within the plume.

h. Soil Boring Data and Methodology. Identify and justify methods used to determine the site stratigraphy. Boring spacing must be sufficient to accurately portray site stratigraphy and delineate the outer edge of soil contamination exceeding the corrective action level under 135.8(8). Provide a log for each boring on a form or in a format prescribed by the department.

i. Soil Sampling Methodology. Define and explain the soil sampling methodology used during the assessment.

j. Groundwater Contamination Plume Maps. Provide groundwater contamination plume map or maps depicting the full extent of free phase product and dissolved phase contamination exceeding the groundwater corrective action levels under 135.8(8) and the levels of groundwater contamination within the plume. The monitoring well spacing will be dependent on site stratigraphy and must be sufficient to adequately define the extent of the contamination plume which exceeds the groundwater corrective action standards under 135.8(8).

k. Monitoring Well Construction Methodology and Design Standards. Describe monitoring well construction methodology and provide logs for all wells with design details illustrated.

l. Groundwater Sampling Methodology. Define and explain the groundwater sampling methodology used during the assessment.

m. Analytical Procedures. Provide copies and tabulations of all analytical results on a form or in a format prescribed by the department. The laboratory analytical result reporting format and analyses conducted must be provided in accordance with 135.10(455B).

n. Hydraulic Conductivity. Determine the hydraulic conductivity of subsurface materials at the site.

o. Hydrogeologic Cross Sections. Provide stratigraphically correlated hydrogeologic cross sections or three-dimensional diagrams which adequately define the spatial relationships of subsurface materials at the site. Ideally, the cross sections should illustrate the materials

in the contamination zone. The sections or diagrams must include, at a minimum, the identification of the types and characteristics of the geologic materials present, identification of the contact zones between different geologic materials, (noting zones of high permeability or fracture) and detailed borehole information including borehole location, depth of termination and the depth of zone of saturation.

p. Site Safety. On-site health and safety procedures must conform with applicable OSHA requirements.

q. Plugging Abandoned Wells and Soil Borings. All abandoned wells and borings that access groundwater must be plugged according to Chapter 567--39(455B). DNR Form 542-1226 must be completed and submitted to the department.

r. Leak Source Identification. Identify the source of the petroleum contamination at the site as required by 135.8(1). Provide copies of all analytical and tank and line tightness testing results and supporting field data.

s. Adjacent Property Owners. Include the names and addresses of adjacent property owners that may be affected by the petroleum contamination.

135.8(4) Site Risk Classification. Sites shall be classified as either high risk, low risk or no action required. The risk assessment and classification shall be based on the actual or potential threat to public health and safety and the environment and shall take into account relevant factors, including the presence of petroleum contamination in soils, groundwater, and surface waters, site geology and the effect conduits, barriers and separation distances have on the contamination. The site classification determination must be based on information obtained during the site assessment investigation, as well as historical and general site information.

a. Site Classification Factors. At a minimum, the following factors must be considered during the classification process when:

(1) Evaluating for the presence of contamination in soils, include the depth of existing contamination in relation to the ground surface, separation distance of the contamination zone from groundwater, and the morphology and variability of soils in the contamination zone.

(2) Evaluating for the presence of contamination in groundwater, include the depth of existing contamination in relation to the ground surface, depth of existing contamination in relation to the ground water level, groundwater flow direction and the relationship between the flow direction and the contamination zone, hydraulic and chemical properties of the protected groundwater source or saturated zone, groundwater uses and the relationship between the contaminated groundwater zone and deeper protected groundwater sources.

(3) Evaluating for the presence of contamination in surface water, include the location and separation distance from the contamination zone, groundwater system and groundwater flow direction.

(4) Evaluating the effects of conduits, barriers and distances on the contamination found in soils, groundwater and surface waters, include the effect of the contamination on such conduits as wells, utility lines, tile lines and drainage systems, the effect conduits have on contaminant transport, whether a well is active or abandoned, what function the utility conduit serves, the existence of barriers, (i.e., buildings, structures, pavement, natural, etc.) and the distance which separates the contamination found in soils, groundwater and surface waters from the conduits and barriers.

(5) The department shall decide the classification based on the recommendation and information provided by the groundwater professional.

b. High-risk classification. A site shall be classified high risk if any of the following conditions exist:

(1) The Threshold Limit Value-Time Weighted Average (TLV-TWA) for benzene in occupied structures exceeds or is likely to exceed 10 parts per million for more than 8 hours per day.

(2) The concentration of combustible gases in structures, basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or any other confined space exceeds or is likely to exceed 10% of the lower explosivity limit (LEL).

(3) The surface water quality criteria standards contained in subrule 567--61.3(455B) of the Iowa Administrative Code are exceeded or are likely to be exceeded due to a hydrogeologic connection between the surface water and the contamination zone.

(4) Petroleum contaminated soil exceeding 100 mg/kg total organic hydrocarbons is in contact with a utility trench carrying a PVC drinking water transmission line.

(5) The petroleum contamination in utility trenches exceeds the corrective action levels in 135.8(8).

(6) Petroleum contamination is present at concentrations, or concentrations are likely to occur, to cause or be likely to cause physical damage to a utility conduit or a structure.

(7) Soil with a total organic hydrocarbon level greater than 100 mg/kg is located within 1,000 feet of an active well used as a public or private water source. A site may be classified low risk if a groundwater professional can demonstrate the water source will not be impacted by the soil contamination to the extent that conditions in subrule 135.8(4)"b"(10) occur. Factors that must be considered in evaluating the impact of the remaining soil contamination include well depth, construction, radius of influence and

use; area hydrogeologic characteristics; soil permeability, transmissivity, and contamination concentrations and persistence; chemical characteristics, and migration potential of the released substance.

(8) Soil with a total organic hydrocarbon level greater than 100 mg/kg is located within the seasonal high groundwater level of a protected groundwater source or groundwater serving as a public or private water source.

(9) The petroleum release occurred in an area of fractured limestone or karst topography (i.e., topography formed on limestone, gypsum and other rocks by dissolution and characterized by sinkholes, caves and underground drainage). A site may be classified low risk if a groundwater professional can demonstrate that the protected groundwater sources in the area of the petroleum release will not be impacted by the contamination to the extent that conditions in subrule 135.8(4)"b"(10) occur. Factors that must be considered in evaluating the impact of the petroleum contamination include area hydrogeologic characteristics; separation distance between the contaminated zone and protected groundwater sources; soil permeability and transmissivity; overburden thickness and contamination concentrations; and the persistence, chemical characteristics and migration potential of the released substance.

(10) A public or private water supply is or is likely to be contaminated to the extent that a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code), or in the absence of a maximum contaminant level, an action level (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) is exceeded.

(11) A protected groundwater source is contaminated to the extent that a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code), or in the absence of a maximum contaminant level, an action level (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) is exceeded.

(12) The contaminated groundwater plume is within 100 feet of natural or man-made structures or conduits that would allow the vertical or horizontal migration of contaminants to a protected groundwater source that is used as a public or private water source.

(13) The contaminated groundwater plume is within 1,000 feet of an active well used as a public or private water source. A site may be classified low risk if a groundwater professional can demonstrate the water source will not be impacted by the groundwater contamination to the extent that conditions in subrule 135.8(4)"b"(10) occur. Factors that must be considered in evaluating the impact of the remaining water contamination include well depth, construction, radius

of influence and use; area hydrogeologic characteristics; soil permeability and transmissivity; and contamination concentrations and persistence, chemical characteristics, and migration potential of the released substance.

(14) The material separating groundwater serving as a public or private water source or which is a protected groundwater source from soil with a total organic hydrocarbon level greater than 100 mg/kg which has a hydraulic conductivity greater than 10^{-4} meters per day. The separating material must have a hydraulic conductivity less than or equal to 10^{-4} meters per day, a minimum thickness of three meters, and be free of subsurface discontinuities between the contamination zone and the groundwater for the site to be not classified high risk.

A site can be classified low risk if a groundwater professional can demonstrate with hydrogeological and risk assessment data that the separating material will prevent or inhibit the migration of contaminants to the groundwater to the extent that a maximum contaminant level (as contained in rule 567--41.3(455) of the Iowa Administrative Code) or in the absence of a maximum contaminant level an action level (as defined in rule 567--133.2(455B, 455E) of the Iowa Administrative Code) will not be exceeded. A sufficient number of measurements of the hydraulic conductivity shall be made to accurately identify the hydrogeologic conditions of the separating material under the full areal extent of the contamination zone. Measurements shall be made at a minimum of two locations. The distance between adjacent measurement locations shall not exceed 100 feet. The department may require additional measurements based on the hydrogeologic complexity of the site.

c. Low risk classification. A site shall be classified low risk if the soil total organic hydrocarbon concentration exceeds 100 mg/kg or the groundwater contamination concentrations exceed a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code), or in the absence of a maximum contaminant level an action level (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) but high risk conditions do not exist and are not likely to occur.

d. A site shall be classified as no action required if the soil total organic hydrocarbon concentration is equal to or less than 100 mg/l or the groundwater contamination concentrations is equal to or less than a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code) or in the absence of a maximum contaminant level an action level (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) and high or low risk conditions do not exist and are not likely to occur.

e. Reclassification. The department may hold informal negotiations to resolve disagreements concerning a site risk classification. Sites shall be reclassified to higher or lower risk classification if any of the conditions under 155.8(4)'b', 'c' or 'd' occur. A site classified as high risk due only to vapor concentrations stated in subparagraphs 135.8(4)"b" (1) and (2), may be reclassified as a low risk site if a permanent solution other than remediation has resulted in at least one year of vapor free conditions. Sites classified as high risk due only to soil contamination stated in subparagraphs 135.8(4)"b" (4), (5), or (6), may be reclassified as a low risk site if all soils exceeding a corrective action level are removed for a distance of at least 50 feet from the conduit and replaced with a compacted clay or other soil having a hydraulic conductivity not greater than 10^{-5} meters per day.

135.8(5) Corrective action response. The best available treatment technology or best management practices available to address the contamination at the site must be identified. The recommended best available treatment technology or best management practices must be consistent with the site risk classification. The corrective action response shall be in a form or format prescribed by the department and include, but not be limited to, the following:

a. Identification of the phases, phase volumes and concentrations of contamination present at the site resulting from the release of petroleum product from underground storage tanks.

b. Classification of site risk in accordance with the criteria cited under 135.8(4)'b', 'c' or 'd', accompanied by supporting documentation and a detailed explanation and justification of the rationale used to make the determination.

c. Sites classified as high risk shall be remediated to the extent that the groundwater does not exceed a maximum contaminant level (as contained in subrule 567--41.3(455) of the Iowa Administrative Code) or in the absence of a maximum contaminant level an action level (as defined by subrule 567--133.2(455B, 455E) of the Iowa Administrative Code) and the soil does not exceed 100 mg/kg total organic hydrocarbons, or alternative levels approved by the department.

d. Sites classified as low risk shall be subject to best management practices which will include contamination monitoring conducted according to the following schedule. Sites shall be monitored according to the previous higher monitoring schedule as established by this subrule if at any time the contamination concentration has increased or moved by a significant amount:

(1) Up to three times per year from years one through three.

- (2) Up to two times per year from years four through six.
- (3) One time per year from years seven through nine.
- (4) In the twelfth year the site shall be monitored one time. The site shall be reclassified as a no action site if there has been no significant increase in concentration or movement of the contamination.

e. For sites classified as high risk, identify at least two practically applicable treatment technologies available to address the contamination at the site. Include cost estimates for each technology with a breakdown of capital, operation and maintenance costs. Explain the environmental and public health benefits, and the estimated time of cleanup of all contamination phases for each technology option being considered.

f. Selection of corrective action treatment technology. Select and provide a detailed justification for implementing the best available treatment technology. An innovative design selection must be accompanied by system operational and technical data that will support the best available treatment technology selection.

g. For sites classified as low risk, provide a best management practices plan. The plan must include maintenance procedures, schedule of activities, prohibition of practices, and other management practices, or a combination thereof, which, after problem assessment, are determined to be the most effective means of monitoring and preventing additional contamination of the groundwater and soil. The plan will also contain a contamination monitoring proposal as required under 135.8(5)'d' containing sufficient sampling points to assure the detection of any significant movement of or increase in contaminant concentration.

h. Provide a discussion of the measures taken to repair, upgrade or close leaking underground storage tanks and piping systems.

i. Free product removal must be conducted as required under 135.7(5).

135.8(6) Site cleanup report approval.

a. The department will approve the site cleanup report upon determination that implementation of the corrective action response will adequately protect human health, safety, and the environment. In making this determination, the department will consider the following factors as appropriate:

-
- (1) The physical and chemical characteristics of the regulated substance, including its toxicity, persistence and potential for migration;
 - (2) The hydrological and hydrogeological characteristics of the site and the surrounding area;
 - (3) The proximity, quality, and current and future uses of nearby surface water and groundwater;

(4) The potential effects of the residual contamination on nearby surface water and groundwater;

(5) An exposure assessment; and

(6) Any information assembled in compliance with this rule.

b. Upon approval of the site cleanup report or as directed by the department, owners and operators must implement the corrective action recommendations, including any modifications required by the department. Owners and operators must monitor, evaluate, and report the results of corrective action activities in accordance with the schedule and on a form or in a format required by the department.

c. The department may, in the interest of minimizing environmental or public health risks and promoting a more effective cleanup, require owners and operators to begin cleanup of soil and groundwater before the site cleanup report is approved.

135.8(7) Public participation.

a. For each confirmed release that is classified as high or low risk, the department must provide notice to the public by means designated to reach those members of the public directly affected by the release and the recommended corrective action response. This notice may include, but is not limited to, public notice in local newspapers, block advertisements, public service announcements, publication in a state register, letters to individual households, or personal contacts by the staff.

b. The department must insure that site release information and decisions concerning the site cleanup report are made available to the public for inspection upon request.

c. Before approving the site cleanup report, the department may hold a public meeting to consider comments on the proposed corrective action response if there is sufficient public interest, or for any other reason.

d. The department must give a public notice that complies with paragraph "a" above if the implementation of the approved site cleanup report does not achieve the established cleanup levels in the report and the termination of that report is under consideration by the department.

135.8(8) Contamination Corrective Action Levels. The following corrective action levels apply to petroleum contamination as regulated by this chapter. The contaminant concentrations must be determined by laboratory analysis as stated in 135.10. Final cleanup determination is not limited to these contaminants.

	Total Organic Hydrocarbon as products stored (TOH)	Benzene	Toluene	Xylene	Ethyl- benzene
Soil	100 mg/kg	-----	-----	-----	-----

Groundwater ----- 5 ug/L 2,420 ug/L 12,000 ug/L 700 ug/L

135.8(9) Certificates.

a. Monitoring certificate. The department of natural resources will issue a monitoring certificate to the owner of an underground storage tank site classified as low risk. The monitoring certificate will be valid until the site is reclassified to a high risk or no action required site. A site which has been issued a monitoring certificate shall not be eligible to receive a certificate evidencing completion of remediation until the site is reclassified as no action required. The monitoring certificate will be invalidated and the site reclassified to high risk if it is determined by the department that the owner of the site is not in compliance with the requirements specified in the monitoring certificate.

b. Certificate of completion of site remediation. Upon written request of an underground storage tank owner, the department of natural resources will issue a certificate to the owner evidencing completion of a remedial action by cleaning the site to then current standards or alternative levels as determined by the department. The following conditions apply:

(1) The written request to the department for the certificate must be made after receiving the department's letter acknowledging compliance with the current standards or alternative levels as approved by the department.

(2) The certificate will be issued if the department does not order further remediation work to be performed within 90 days of the department's letter acknowledging compliance with current standards or alternative standards as approved by the department.

(3) A person issued a certificate shall not be required to perform further remediation.

(4) The certificate shall not prevent the department from ordering remediation of a new release or a release of a regulated substance from an unregulated tank.

(5) The certificate will not constitute a warranty of any kind to any person as to the condition, marketability or value of the described property.

ITEM 12. Amend renumbered 135.10(3) as follows:

135.10(3) Analysis of soil and water for high volatile petroleum compounds (i.e. gasoline, benzene, toluene, xylene). Sample preparation and analysis shall be by Method OA-1 , "Method for Determination of Volatile Petroleum Hydrocarbons(Gasoline)." revision 1/10/90 7/1/91, University Hygienic Laboratory, Iowa City, Iowa. This method is based on U.S. EPA methods 5030, 8000, and 8015, SW-846, "Test Methods for Evaluating Solid Waste," 3rd Edition. Copies of Method OA-1 are available from the department.

ITEM 13. Amend renumbered 135.10(4) as follows:

135.10(4) Analysis of soil and water for low volatile petroleum hydrocarbon contamination(i.e. all grades of diesel fuel, fuel oil, kerosene, oil, mineral spirits). Sample preparation and analysis shall be by Method OA-2, "Determination of Extractable Petroleum Products (and Related Low Volatility Organic Compounds)," revision 4/10/90 7/1/91, University Hygienic Laboratory, Iowa City, Iowa. This method is based on U.S. EPA methods 3500, 3510, 3520, 3540, 3550, 8000, and 8100, SW-846, "Test Methods for Evaluating Solid Waste," 3rd Edition. Copies of Method OA-2 are available from the department.

ITEM 14. Due to the adoption of a new rule 135.8, the rescission of subrules 135.7(7) through 135.7(10), the rescission and redesignation of 135.6(3) and the renumbering of former rules 135.8 and 135.9, all rules in chapter 135 referencing these renumbered rules have been amended accordingly. These are considered technical and not substantive changes.

Renumber and change the following references:

Subrule 135.1(3), paragraph "c" first sentence - renumber 135.8(455B) to 135.9(455B).

Subrule 135.3(2), subparagraph "a"(3) - renumber 135.8(455B) to 135.9(455B); change 135.7(455B) to "135.7(455B) and 135.8(455B)".

Subrule 135.4(5), subparagraph "a"(3) - renumber 135.7(7) to 135.8; subparagraph "a"(4) - renumber 135.8(2) to 135.9(2); subparagraph "b"(5) - renumber 135.8(5) to 135.9(5); in "Note" - renumber 135.8(5) to 135.9(5).

Subrule 135.5(1), paragraph "d" - renumber 135.8(455B) to 135.9(455B).

Subrule 135.5(2), subparagraph "a"(2) - renumber 135.8(2) to 135.9(2).

Subrule 135.6(4), paragraph "a" end of first sentence - change 135.7(455B) to "135.7(455B) and 135.8(455B)".

Subrule 135.7(3), subparagraph "a"(5) - renumber 135.6(3)"b" to 135.8(1); renumber 135.8(3)"a" to 135.9(3)"a".

Renumbered subrule 135.9(1), paragraph "a" second sentence - change 135.7(455B) to "135.7(455B) and 135.8(455B)"; paragraph "c" - renumber 135.8(2) to 135.9(2); renumber 135.8(5) to 135.9(5); renumber 135.8(3) to 135.9(3).

Renumbered subrule 135.9(2), paragraph "a" - renumber 135.8(3) to 135.9(3); paragraph "c" - renumber 135.8(3) to 135.9(3); in Note - renumber 135.8(2) to 135.9(2).

Renumbered subrule 135.9(3), paragraph "g" third sentence - change 135.7(455B) to "135.7(455B) and 135.8(455B)"; paragraph "g," second paragraph - renumber 135.8(4) to 135.9(4).

Renumbered Subrule 135.9(4), paragraph "a" - renumber 135.8(3) to 135.9(3); paragraph "c" - renumber 135.8(3)"a"

to 135.9(3)"a"; paragraph "d" - renumber 135.8(3)"b" to 135.9(3)"b"; paragraph "e" - renumber 135.8(3)"e" to 135.9(3)"e".

Renumbered subrule 135.9(6), second sentence - renumber 135.8(3) to 135.9(3).

ITEM 15. Amend renumbered subrule 135.9(3), paragraph "a" as follows:

a. Before permanent closure or a change in service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting the sample types, sample locations, and measurement methods, the owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to groundwater, and other factors appropriate for identifying the presence of a release.

At petroleum UST sites, the minimum parameters that must be analyzed for are:

1. Soil samples must be analyzed for total organic hydrocarbon (TOH) as the product stored in the tank;
2. Groundwater samples must be analyzed for benzene, toluene, ethylbenzene, and xylene with each compound reported separately.

All such samples shall be collected separately and shipped to a qualified laboratory within 72 hours of collection. Samples shall be refrigerated and protected from freezing during shipment to the laboratory.

DATE

Larry Wilson, Director

Mr. Stokes explained that this item was provided as Item 12 in the agenda packet at the regular meeting of the Commission, on Monday of this week. The rule, responsiveness summary and recommended changes were provided in that item. He noted that Commissioner King questioned the wording at the top of page 2 in the Preamble, and following research by staff it was determined that the wording should remain as is because it is an excerpt out of the rule defining soil contamination in the plume map. Also, a typographical error was previously pointed out on page 8, under a.(1), and that has been corrected. Mr. Stokes added that on page 4 of the Responsiveness Summary, Commissioner Siebenmann questioned the use of the word "effectively," and it has been changed to "appropriately." Mr. Stokes asked the Commission's approval of the rules.

Clark Yeager asked if the Commission received a copy of the Environmental Impact Statement.

Mr. Stokes stated that the Commission reviewed and took final action on it at their January 21 meeting.

Motion was made by Nancy Lee Siebenmann to approve Adopted and Emergency Filed Rule--Chapter 135, Technical Standards for Underground Storage Tanks. Seconded by William Ehm.

Roll call vote was taken. "Aye" vote was cast by Commissioners Priebe, Siebenmann, Yeager, Britt, Ehm, King, and Hartsuck. Motion carried unanimously.

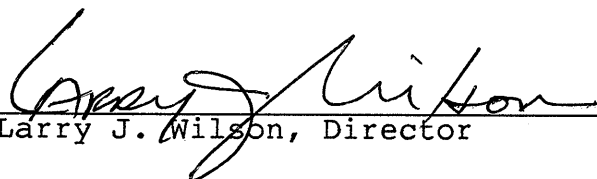
William Ehm asked if there is a need to rescind amendments that are already in place.

Mr. Stokes replied that this action overrides any previous action.

Mr. Stokes stated that a notice will be sent to all regulated groundwater professionals advising of an informational session staff will provide to walk them through the rules.

ADJOURNMENT

With no further business to come before the Environmental Protection Commission, Chairperson Hartsuck adjourned the meeting at 10:10 a.m., Thursday, February 20, 1992.


Larry J. Wilson, Director

February 1992

Environmental Protection Commission Minutes

Richard Hartsuck

Richard Hartsuck, Chairperson

Nancylee Siebenmann

Nancylee Siebenmann, Secretary

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